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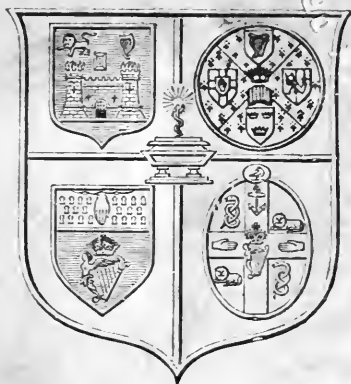
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THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

MARCH 1, 1898.

PART I. ORIGINAL COMMUNICATIONS.

ART. XII.—*Laryngeal Necrosis in Enteric Fever.*^a By SIR GEORGE DUFFEY, M.D.; President Royal College of Physicians of Ireland; Physician to the City of Dublin Hospital, &c.

THE occurrence of laryngeal complications in enteric fever, and their relationship to the typhoid process, is a matter of considerable interest. Under the name of Laryngo-Typhoid, Professor C. Gerhardt, of Würzburg,^b has described a case in which typhoid commenced as a laryngitis, and was first localised in the larynx. But more usually, and apparently much more frequently in France and Germany than in Great Britain and Ireland, laryngeal affections in enteric fever occur as a secondary complication at a late period in the course of the disease.

That the inflammation and ulceration of the laryngeal mucous membrane, which is the usual starting point of perichondritis and subsequent necrosis of the laryngeal cartilages in these cases, is of a specific or typho-genetic nature—the result of the typhoid bacillus—would appear to be a reasonable presumption. It is not one, however,

^a Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, January 28, 1893. [For discussion on this paper, see page 244.]

^b Archives of Laryngology. Vol. I., p. 121.

I believe, that is generally accepted. Dr. P. Watson Williams,^a in 1894, communicated to the Section of Laryngology and Otology at the annual meeting of the British Medical Association at Bristol, particulars of a fatal case of enteric fever with laryngeal ulceration, in which cultures from the local lesion yielded the typhoid bacillus.

Drs. Kanthack and J. A. Drysdale^b hold, however, that the laryngeal lesions are undoubtedly caused by micro-organisms, and that these are pyococci, and not, with very rare exceptions, the typhoid bacillus. Lesions which are looked upon as instances of secondary infection by streptococci, such as localised periostitis, are comparatively frequent in cases of enteric fever complicated by secondary suppuration. And in some cases—which are always ones of peculiar gravity—typhoid bacilli have been found associated with streptococci.

Again, Dr. Johnson Horne^c states that in some of the larynges of persons dying from typhoid fever the ulceration has been proved by microscopical examination to be of a tuberculous nature. Hence the tuberculous diathesis may be, in this way, a factor in the ætiology of typhoid ulceration of the larynx, one of the characteristic features of which affection is the tendency to suppuration about the cartilages, leading to their necrosis.

Some (Dittrich, Ruehle) look upon the laryngeal ulcers in enteric fever, as well as in tuberculosis also, as allied in their origin and nature to bed-sores, and due partly to pressure and partly to disturbance in the circulation and innervation of the parts, and the name of “decubitus ulcers” has consequently been proposed for these ulcers.^d Landgraff^e considers, however, that the necrosis of the mucous membrane is a local gangrene produced not by pressure, but by blood stasis. In his admirable Lettsomian lecture delivered last year,^f Dr. F. De Havilland Hall

^a Brit. Med. Jour. Vol. II., 1894, p. 1353.

^b Ibid. Vol. I., 1896, p. 596.

^c Laryngolog. Soc. Lond. Feb. 12th, 1896; and Brit. Med. Jour., *ibid.*, and Vol. I., 1897, p. 323.

^d Allbutt. System of Med. Vol. I., p. 819.

^e Central f. klin. med., No. 17. Lancet. Vol. I., 1890, p. 1135.

^f Brit. Med. Jour. Vol. I., 1897, p. 323.

states that he is inclined to agree with Kanthack and Drysdale in their belief that these laryngeal ulcerations during the course of typhoid fever are caused by fresh infection with pyogenic organisms, which always abound in the larynx, and which gain a firm foothold on the debilitated tissues; although they cannot deny that in an individual case the typhoid bacillus may have escaped and caused the lesion.

I regret that I am unable to adduce any bacteriological or microscopical evidence, confirmatory or otherwise, of any of the views I have mentioned; but some details of a case I had recently under my care, in which, for the second time in my experience, fatal laryngeal complication occurred in enteric fever, may be of some interest.

CASE.—J. S., a slightly-built, poorly-nourished, delicate-looking man, aged twenty-two years, married, was admitted to the City of Dublin Hospital on 3rd November, 1897. He stated that his illness commenced with a shivering about a fortnight before his admission, but he continued at his work as a labourer, although feeling unwell, for a week, when he took to his bed, where he remained another week, and was then seen by Dr. Hatch, who sent him to hospital. Enteric fever was diagnosed; the attack was an extremely severe one, his temperature for nine days subsequent to admission being an almost continuous one of 104° . He had also troublesome cough and some expectoration, due to bronchitis, and his bowels were at first constipated; but on Nov. 10th and 11th—probably the 20th and 21st days of his illness—he had some diarrhoea, and the light-coloured fluid-stools were passed involuntarily. All through his illness he was heavy and drowsy, and from an early period in it his pulse was quick, weak, and dicrotic. His respirations were generally 30 in the minute.

On Nov. 18th (28th day) his temperature fell to 102° . He appeared better; the cough was not so troublesome, and the expectoration had ceased. Four days subsequently (32nd day of disease) there was a further fall of his temperature to 101° . He seemed more sensible, and to be convalescing, although extremely weak.

On Saturday, Nov. 27th (37th day), a week before his death, the night nurse reported that at four a.m.—having previously slept quietly for four hours—he had had a fit of coughing, and had found great difficulty in breathing for some minutes. His temperature

fell to 97·8°, from having been 101° the previous evening. The following night he first complained of his throat, but poulticing relieved it temporarily. During the next day he seemed fairly well, although heavy and drowsy; but at night his throat again became troublesome, and his breathing so loud and stridulous that it could be heard on the landing above the ward he was in. The House Surgeon noticed that the uvula was very pendulous. His condition as regards his breathing varied considerably during the following days—sometimes better, but always worse at night and when asleep. There was also some hoarseness, and the voice was weak. No tenderness was elicited on pressure over the larynx, nor was there any swelling about it or of the glands in the neck. My colleague, Dr. Parsons, kindly essayed to make a laryngoscopic examination, but owing to the great physical prostration of the patient, and the dependent position of the epiglottis, which was slightly injected, the glottis could not be seen.

In the event of the necessity suddenly arising, everything was kept in readiness for the operation of tracheotomy. On the night of Dec. 1st his respiration, which had been quiet during the day, became much more difficult, and there was some dysphagia. His temperature continued subnormal, and he was extremely weak. Early on the morning of Friday, Dec. 3rd, his breathing, which had presented the usual exacerbation during the night, was still so laborious and noisy that a consultation was hastily summoned to consider the propriety of an operation. The straining and exaggerated movements of the larynx were most distressing, but upon auscultation plenty of air was heard entering the lungs, and there were no threatening symptoms of suffocation and no cyanosis. It was considered, and not unreasonably, by some of the consultants that the man was then in a dying state, and an operation was not therefore concurred in. He improved slightly during the day, and took nourishment fairly. At midnight his temperature fell to 95°. He became much weaker and cyanosed, and died about 2 30 a.m. on Saturday, Dec. 4th, the 44th day of his illness, and the 7th day from the accession of the laryngeal symptoms.

The *post mortem* examination showed typical typhoid ulceration, in process of cicatrisation, in the ileum, with enlargement of the mesenteric glands and of the spleen. The lungs and other organs appeared normal. The larynx (specimen exhibited) was carefully removed by my colleague, Mr. G. Jameson Johnston. The epiglottis was swollen, and there was œdema of the ary-epiglottidean folds. The mucous membrane over the arytænoids was also swollen and injected. On the external and posterior surface of the plate of the

cricoid a small dirty-yellowish spot was observed. An incision through this spot opened a small abscess, which contained about half a drachm of pus. The abscess-cavity separated the swollen perichondrium from the underlying cartilage, which was roughened and eroded. No ulceration was observed.

Seventeen years ago I exhibited, at a meeting of the Pathological Society of Dublin,^a a specimen of necrosis of the cricoid and arytaenoid cartilages, which occurred during apparent convalescence after a severe and protracted attack of enteric fever. In that case the laryngeal symptoms—which were almost identical with those in the case I have just detailed—set in on the seventy-ninth day of the man's illness, and proved fatal in seven days also. An abscess the size of a walnut was found between the pharynx and the arytaenoid and cricoid cartilages, portions of which could be felt bare and loose at both sides of the abscess. No ulceration was visible in the larynx, but there was evident perichondritis and necrosis of the cartilages.

At the meeting at which I showed the latter specimen both Drs. A. W. Foot and J. W. Moore mentioned having each had a case of enteric fever under their care in which laryngeal symptoms had occurred; and Dr. E. H. Bennett described a case of laryngeal perichondritis after typhoid, in which he had successfully performed tracheotomy—the operation being necessary in consequence of an attack of violent dyspnoea. With the exception of the remarkable case brought before the Section of Pathology of this Academy by my colleague, Dr. Parsons,^b in November, 1894, in which acute laryngitis set in suddenly on the thirty-second day of a case of enteric fever, necessitating tracheotomy, subsequent to which general emphysema occurred, no other similar cases in Ireland have been published, as far as I know. In England, also, the complication appears to be seldom met with. It is possible that its occurrence may be often overlooked at autopsies, in consequence of the absence of any definite symptom during the patient's life pointing to the larynx. Indeed, it has

^a *Dubl. Jour. Med. Sci.* Vol. LXXI., p. 555.

^b *Trans.* Vol. XIII., p. 337.

been asserted by Fagge^a that ulceration in these cases very rarely gives rise to any symptoms. Thus, in the second case of the kind reported by Dr.—now Sir Samuel—Wilks,^b it is expressly stated that there were no symptoms especially referable to the larynx. After death a small slough was found at the back of the larynx, close to the posterior attachments of the vocal cords, and the arytaenoid cartilage was also exposed.

In the first case described by Wilks^c—the remarkable one in which general emphysema occurred—no mention is made of any laryngeal symptoms. The patient was a lad aged twelve years. About the twelfth day of his illness (typhoid fever) his neck was observed to be emphysematous. He lived for ten days subsequently. After death a sloughing ulcer was found in the back of the larynx at the junction of the vocal cords. Air had penetrated through the opening thus formed into the posterior mediastinum, and thence by the thoracic walls to the neck and other parts of the body. Von Ziemssen^d also met with a similar case in which general emphysema occurred, in a girl of four years of age, in the middle of the third week of her fever. A perforating ulcer, the size of a lentil, was found at the base of the left arytaenoid cartilage, under the left vocal cord, penetrating to the necrotic arytaenoid and cricoid cartilages. But during life there was “no hoarseness, no appearance of laryngeal stenosis.”

As to the frequency of laryngeal complications in enteric fever—among a total of 6,513 cases of enteric fever, of which 439 were fatal, seen at St. Petersburg in the quinquennial period from 1886–87 to 1890–91, Ouskow^e found ulceration of the larynx in about 30 per cent. Griesinger^f met with it in 31 out of 118 autopsies (=27 per cent.). Kanthack and Drysdale, from the *post mortem* records of 61 cases, found ulceration in 26 per cent., and Zuelzer in

^a Prin. and Pract. of Med. Second Ed. Vol. I., p. 182.

^b Trans. Path. Soc. Lond. Vol. XI., p. 14.

^c Ibid. Vol. IX., p. 34.

^d Cyclopæd. Vol. VII., p. 827.

^e Annual Univ. Med. Sci., 1894. Vol. I., p. 23.

^f Quoted by Parsons. Loc. cit.

more than 20 per cent. Hoffman,^a as quoted by various authors, gives 28 cases out of 250 necropsies, that is a percentage of 11 only as against 30. Out of 20 cases of perichondritis given in Retslag's statistics, typhoid fever was the ascribed cause in 8; and in another series of 45 autopsies of cases of necrosis of the cartilages, also published by M. Mackenzie,^b the cricoid—which appears to be the cartilage that most commonly suffers—was affected in four instances.

None of the cases reported by Ouskow occurred in the first week of their illness. Of cases dead in the second week, 79—i.e., 45 per cent.—presented ulceration of the larynx. Of those dead during the third week, 144—37 per cent.—presented laryngeal ulceration; of those dead in the fourth week, 89—39 per cent.—presented ulceration. The affection is, accordingly, one that is more frequent at a late stage of the disease; and, as Trousseau has pointed out, is especially likely to occur in protracted cases of an adynamic type.

Dr. Church,^c in the same year as that in which my first case was reported, recorded a case in which two small abscesses formed in the larynx, in connection with necrosis of the arytaenoid cartilages, and were the immediate cause of death, which happened about the end of the fourth week of the fever. Osler^d has seen two cases of the kind, both of which recovered—one after the expectoration of large portions of the thyroid cartilage. Hérard and others have had similar cases. Trousseau, who refers to Hérard's case, himself met with two instances only of perichondritis laryngea, as a sequel to enteric fever.^e In both of these tracheotomy was successfully performed. He quotes three other cases, all of which were fatal. The first, on the second day after tracheotomy, and the second died during the operation. The third case was not operated upon.

Hölscher, cited by Pepper,^f reports tracheotomy having

^a Fagge. Loc. cit. J. W. Moore, Eruptive and Cont. Fevers, p. 418, &c.

^b Diseases of the Throat and Nose. Vol. I., p. 391.

^c St. Bart. Hosp. Rep. Vol. XVII., p. 104.

^d Prin. and Pract. of Clin. Med. P. 25.

^e Clin. Méd. T. I., 197. 1861. And Syd. Soc. Trans. Vol. II., 398.

^f Text-book. Vol. I., p. 95.

been done 15 times for perichondritis in 2,000 fatal cases of typhoid fever.

As regards the question of performing tracheotomy in such cases as mine, I much regret now that I did not request my surgical colleagues to consider the advisableness of operating at an earlier period in the case than that at which I did in both my cases. I think that if a tracheotomy had been done as soon as the laryngeal symptoms became urgent, and were found not to be permanently relieved by the treatment adopted, it would, at least, have given the inflamed larynx rest;^a and would also, to a great extent, have saved the patient the exhaustion induced by the dyspnoea.

According to Theopold's statistics,^b in twenty-two cases of perichondritis after typhus (enteric fever ?), tracheotomy was successful eight times, so far as the preservation of life was concerned. In none of these eight patients, however, did the stenosis afterwards diminish to such an extent as to permit of the removal of the cannula. Pachmayr, quoted by Stolterforth,^c has collected a series of 46 cases of tracheotomy for laryngitis during the course of typhoid. Of these 20 recovered.

In one of the cases referred to by Trousseau, the patient, it is said, had been subject to loss of voice before his attack of typhoid fever. The mother of the man whose case I have now brought forward told me that he always had "a delicate throat." Possibly an hereditary predisposition, or, perhaps, a previous tendency to laryngeal inflammation, may render patients who contract enteric fever more vulnerable than others to this serious complication.

In further considering the aetiology of the laryngeal complications of enteric fever, I have been struck by the circumstance that, in the reported cases I have been able to consult and in which the particulars are given, all the patients, with one exception (von Ziemssen's case), were young men. Thus the ages in Trousseau's cases were 18,

^aCf. Hilton. *Rest and Pain*. 6th Ed., p. 64.

^bVon Ziemssen. *Loc. cit.*

^c*Lancet*. 1889, p. 682.

20, 22, and 17; in Wilks', 12 and 23; W. Williams', 20 and 38; Gerhardt's, 18; J. W. Moore's, 15; Parsons', 22; and my two cases, 27 and 23.

ART. XIII.—*A New Method of Nephrectomy.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

(Continued from page 7.)

THE following cases were conducted on the same plan as Case I., described in my paper on this subject in the January number of this journal:—

CASE II.—Mr. J. S. came under my care on October 10th, 1896, complaining of pain in the right side, dragging weight in the right loin, and frequency of micturition. He had a temperature of 104° at night, 99° in the morning, with nocturnal sweats. On examination I found a large nodular tumour occupying the right sub-chondrial region, and bi-manual examination showed that it rested on the quadratus lumborum, and it was movable downwards and inwards. There was slight albuminuria, but urea was excreted in fair amount.

On Oct. 12th, assisted by Mr. Tobin and Dr. Smyth, I removed a mass weighing $5\frac{1}{2}$ pounds. During the operation I found it necessary to freely incise the mass, to evacuate considerable quantities of pus, so as to reduce its size and allow its removal. Continuous irrigation with warm boric solution and packing round of the tumour with gauze sponges prevented local infection, while early suture of the peritoneal incision protected that membrane. One of the incisions bled profusely, but fixing the edges by clamp forceps and then encircling the mass beyond these with elastic tubing thoroughly arrested the flow. The course of this case was uneventful, and he left town on the 15th day after operation increased in weight, free from night sweats, and passing urine in normal amount, and free from albumen.

CASE III.—Mrs. Ann B., aged fifty-eight years, came under my care on Oct. 8th, 1896. She was pale and emaciated, had frequent vomiting and diarrhoea, and for some months she had observed occasional discharges of offensive-smelling matter in the urine. This discharge had of late increased in quantity and occurred more frequently, so that a diagnosis had been made of suppurative cystitis. On examination I found a tumour occupying the left

lumbar region. It was rounded in outline and extended inwards to the umbilicus, and downwards to the crest of the ilium. It was movable downwards and inwards, and its posterior surface could be felt on the quadratus lumborum. Fluctuation was marked on the inner aspect, and here and there spots of fluctuation could be felt.

While the patient was kept in bed she had little or no pain, and the discharges of pus became less frequent, and it was noticed that as long as she remained on the right side no pus appeared in the urine, but on changing position suddenly a free flow of pus occurred.

On the 19th of Oct. I opened the left semilunar line and examined the right kidney, which was slightly larger than normal, but smooth and of normal outline. I cleared the peritoneum from the outer lip of the wound and closed the peritoneal opening by continuous suture. Now, passing my hand backwards between the parietal peritoneum and the transversalis fascia to the edge of the quadratus lumborum, I guided the blade of a stout scissors backwards and upwards and cut through the abdominal wall so as to expose the peri-renal fat. Turning the flaps thus formed upwards and downwards, as in Fig. 4, page 5, I was enabled to examine the tumour thoroughly, and finding the pelvis distended and very tense, I determined on dealing at once with the ureter, so pushing the colon inwards, and with it the outer layer of meso-colon, I was enabled to secure the ureter by double ligature and then cut it. The renal vessels now came to hand with ease and were ligatured close to the aorta. Near the tumour a strong clamp was applied and the vessels were divided. As there was great foetor all this time from the tumour irrigation with warm boric solution was kept up, so that should any rupture of the pelvic or cortical abscesses occur the discharge would be at once removed. Once the vessels were secured enucleation of the tumour was safe and easy.

Fig. 5 is a photograph of the mass reduced to one-fourth the original size, and it shows a peculiar sigmoid twist of the ureter, which accounted for the intermittent flow of pus from the pelvis. So long as the kidney fell downwards and to the right this twist was exaggerated, and no discharge could occur, but the moment the kidney fell back into place the ureter became somewhat straight and pus escaped.

This patient made a perfect recovery, and some weeks later kindly presented herself at the Surgical Section of the Royal Academy of Medicine to allow me to demonstrate the absence of any weakness in the lines of incision. The value of trans-



MR. M·ARDLE ON NEPHRECTOMY.

FIG. 5.—Kidney showing (a) Dilated pelvis; (b) sigmoid twist on ureter, which caused intermittent flow of pus from pelvis; (c) many secondary collections of pus in the cortex. The perirenal tissue filling up hilum is well shown.

peritoneal examination of the opposite kidney cannot be exaggerated. Here, for instance, I removed a kidney with much substance, capable of secreting urine, but so diseased that its removal was decidedly indicated when the opposite kidney was sound; but, had I found the other kidney diseased, displaced or absent, my course of action would have been very different, because nephrectomy under these conditions would lead to the development of uræmia and rapid death. What I have done successfully in cases complicated by renal incompetency on the side opposite the tumour is to freely incise the abscesses, pelvic and cortical, thoroughly irrigate with a solution of acetate of aluminium, and then tampon tightly with iodoform gauze, which should be frequently changed. This procedure I have found to be of immense temporary benefit, and in several cases years of comparative comfort have been obtained for the patient.

(To be continued.)

ART. XIV.—*Successful Laparotomy, with Removal of both Fallopian Tubes, for Acute Suppurative Peritonitis, supervening upon Double Pyosalpinx.* By JAMES R. WALLACE, M.D., F.R.C.S.I.; Fellow of the Obstetrical Society of London; formerly Resident Surgeon to the Eden Hospital for Women and Children, Calcutta.

MRS. S., a Scotch lady, twenty-eight years of age, of very delicate physique, for some years a resident of Calcutta, six years married, gave birth to her first and only child ten months after marriage. No further issue. Has suffered with ovarian pain since her child's birth, in June, 1893. Came under my care about three years ago for menstrual trouble. Was completely relieved, and seemed to regain her health in every way. Being one of my regular annual patients, I frequently saw her, and by means of sedatives, timely given, her sufferings were minimised, though every now and again they threatened badly. During my absence in England she got a severe attack of pelvic inflammation, and was attended in August last by Surgeon-Lieutenant-Colonel J. Lewtas, under whose care she obtained very

satisfactory relief. Early in October she was laid up again with pelvic cellulitis, supervening upon a severe chill, due to bathing in a very windy bathroom. Her temperature rose to 105° , and kept ranging between 102° and 104° for days. There were intense nausea and vomiting and great pelvic pain and tenderness, more marked in the left iliac region. There were the most troublesome restlessness and insomnia, due to pain, which narcotics and hypnotics could not relieve. Fomentations, local sedatives, and counter-irritants all failed to afford anything more than very transient comfort in her great suffering. Examined vaginally and bimanually, the uterus was found immovably fixed in a dense, hard mass of infiltration, filling the left and extending partially into the right *cul-de-sac*. This swelling reached almost to the umbilicus above, and pressed firmly on the sacral hollow. It was devoid of resiliency or any sign of fluid formation. This state of things continued till the 8th November, when, on examination, I detected distinct fluctuation in the left *cul-de-sac*. The patient had now become very low, and as the exhaustion, coupled with the high temperature present, pointed to considerable risk, I advised a consultation with some other physician. I, therefore, asked Surgeon-Lieutenant-Colonel A. Leahy to see the case with me. He confirmed my opinion as to the fluid formation in the left iliac region, and agreed with me in the view that immediate aspiration should be resorted to. I accordingly called in Dr. J. G. Anderson, who chloroformed the patient, and I aspirated the left *cul-de-sac*, drawing off nearly five ounces of thick, grey-coloured pus. This was followed by immediate relief and comfort, and sound sleep, together with a fall of temperature to normal. For three days the patient seemed doing most satisfactorily, but on the fourth day after the operation pain and tenderness returned, together with fever, which rose again to 104° , attended with the same restlessness and insomnia.

On the 14th October the patient was very much worse; the abdomen was greatly distended and tympanitic, and acutely tender to the touch; the pulse was small and thready and intermittent; the body was bathed in cold perspiration, and collapse seemed imminent. Vaginal examination proved

a re-accumulation of pus in the left side of the pelvis, while in the right *cul-de-sac* there was a similar fluctuant tumefaction. I called in Dr. Leahy, as I felt convinced that general pelvic suppuration, with peritonitis of a like character, had set in, and the saving of life could only be effected by abdominal section and rapid washing out of the peritoneal cavity. Dr. Leahy concurred in this opinion, and I resolved to let the patient have the best and only chance of recovery. Her critical condition was explained to her and her husband, and the risks of the operation were also clearly set forth to them. They both readily decided for the operation. The room was an upper flat, airy apartment, surrounded on every side by other houses, and in the most densely populated portion of the English quarter of the city. The room having been thoroughly swept, the walls well dusted, all hangings removed, and the floor washed with a strong solution of carbolic acid, nothing but the operating table, the nurse's bed, a couple of chairs and side tables were placed in it, every other item of furniture being turned out. As helps at the operation I had Dr. Ayatulla, M.B. Edin., Mrs. E. W. Madge, L.M.S., and Nurse Robson.

As it was decided to operate at 2 p.m. no food was given to the patient from 10 a.m. At noon an enema was administered, and the patient's bowels were relieved, her bladder was also emptied, and the hair shaved from the pubis, while the abdomen and thighs and back were thoroughly washed, and a sterilised towel, soaked in hot carbolic acid solution, was laid over the abdomen and the vulvæ, and tucked under the nates. The preparations for the operation were simple, and were as follows:—About 40 gallons of pure boiled water, cooled down to 100° F; a dozen new hand towels, two new flannel binders, 4 yards of gauze, some cotton wool, a dozen sponges, a two-quart irrigator, fitted with a new rubber tube, stop-cock, and pipe; a bucket, a glass tray for instruments, and two pus basins. The instruments for use were a scalpel, a dissecting forceps, a pair of dressing scissors, a director, six Spencer Wells' forceps, two metal retractors, six curved surgical needles and a needle-holder, besides silk, silver, and horsehair sutures. *Everything* used in the operation was sterilised—i.e., put into boiling water

for twenty minutes—except rubber tubes, which were irrigated and carbolised.

At 2 p.m. the patient was placed under chloroform by Dr. Ayatulla, the abdomen and other parts were carefully bathed and scrubbed clean, and the two assistants (Mrs. Dr. Madge and Nurse Robson) and myself, having first of all undergone the most careful cleansing of our hands and nails and arms (each one's nails were cut short) by means of repeated washing with soap and boiled water, and scrubbing with nail brushes, the abdomen, in the median line, was laid open carefully down to the peritoneum, by an incision four inches long. All bleeding points were secured, and the peritoneum nicked up and slit over a director. The peritoneum was found thickened, and inflamed, and covered with cake-like deposits of lymph which had caused firm adhesions between this membrane and the intestines. By gentle manipulations these were freed, and then the true state of things in the pelvis was revealed. The pelvic cavity was filled with an indescribable mass of hardened tissues and organs, whose outlines were completely disfigured by inflammation and suppurative changes. Most patiently and carefully, however, the uterus was cleared, and then the ovaries were reached, and it was seen that the tubes were enormously distended with pus. They were both freely incised and about eight ounces of pus came away. This was removed from the pelvic cavity by means of soaking with sponges. It was now found that the membrane of the tubes looked very sloughy, almost gangrenous, so I snipped off all the unhealthy looking shreds, and, finding the ovaries healthy, I left them untouched. I now allowed a stream of sterilised water to flow into the abdomen and thoroughly wash out its entire cavity. Having assured myself that there were no bleeding points (the few that showed themselves were stopped easily by a few moments' pressure with Wells' forceps), and that the pelvis was thoroughly clean, I placed a large rubber drainage tube into the pelvic cavity and fixed its outer end to the lower angle of the abdominal wound. This was removed after 48 hours. I now stitched the edges of the incision together, using three consecutive layers of stitches, the first of silk for the peritoneum, the next of silk for the

abdominal muscles, and the third of silver wire for the abdominal wall (skin and fat). Superficial horsehair stitches were used to accurately co-adapt the edges of the cut skin. The dressings consisted of sterilised gauze and sterilised cotton kept *in situ* by a sterilised towel used as a binder. This dressing was not changed for two days. The patient bore chloroform well and also the early part of the operation, but by the time she was dressed the pulse had run down alarmingly and she was in a state of collapse. An enema of brandy and egg yolk and milk (the yolk of one egg, a dessert-spoonful of brandy and two ounces of milk) was given per rectum and repeated every two hours. Hot bottles were placed around the trunk and extremities. She was allowed to suck ice, but nothing else was given her by the mouth for 48 hours. After the first rectal injection the patient rallied and continued to improve. Beyond a little burning pain in the wound the operation was followed by a complete subsidence of the fatally threatening peritonitis and absolute relief of all pain, a complete lowering of febrile temperature and the most refreshing sleep. Nothing could have been more gratifying than her condition for the first 48 hours after the laparotomy. Within eight hours of the operation the patient voided urine, and within 20 hours the bowels moved naturally. On the second day after the operation, after the removal of the dressings, the patient began to suffer with a teasing sense of twitchings in the wound, but this was due to flatulence, as it was relieved by a dose of oil of turpentine. This was accompanied by some degree of restlessness and sleeplessness, which were combated by Battley's sedative.

The diet after the first 48 hours (when the rectal feeding ceased) was soup, sago, milk, water and grapes, and this was continued till the eighth day after the operation, when light solid food was allowed. The outer stitches were removed on the eighth day, and the wound was found healed by first intention, save in a spot over one of the deeper sutures. From this place a little pus oozed for a few days, and then I closed the gap with a horsehair stitch and it healed at once. There is nothing further of special interest to note, save that the subsequent convalescence of the patient was un-

marked by a single bad symptom. It is of importance to remark, from a clinical as well as a physiological and anatomical point of view, that the patient had a free and painless menstruation 34 days after the operation. It may be interesting to mention that on the fourteenth day after the operation she was well enough to sit up, that she left her bed on the twentieth day, and was going about in her carriage on the thirtieth day, though she underwent so severe a surgical operation for a serious and critical malady which threatened to destroy her life.

This case is further worthy of record among the few successful ones of its kind that have been performed in India.

LITERARY NOTE.

THE Rebman Publishing Coy.'s new books include a new "Pocket Formulary for the Treatment of Diseases in Children," by Dr. L. Freyberger, of the Great Northern Central Hospital, London; and a work on "Surgical Diagnosis and Treatment," by J. W. Macdonald, M.D., Edinburgh. They also announce the completion of their "Pictorial Atlas of Skin Diseases" (St. Louis' Hospital Museum, Paris), edited by J. J. Pringle, M.B., F.R.C.P.

A CURIOUS LITERARY COINCIDENCE.

It is rather curious that *Trewinnott of Guy's*, the first book published by Mr. John Long, the new publisher, should be by Mrs. Coulson Kernahan, whose husband's work, *The Child, the Wise Man and the Devil*, was selected by Mr. James Bowden as the first book he issued. A feature which marks out *Trewinnott of Guy's* from the generality of novels is that it deals with medical life, concerning which it is strange how few stories have been written. The dedication has been accepted by Sir Samuel Wilks, Bart., President of the Royal College of Physicians, with whom Mrs. Kernahan's first husband, the late G. T. Bettany of Guy's Hospital and Caius College, Cambridge, collaborated in writing the History of Guy's Hospital. Her first novel, *The House of Rimmon*, was an emphatic success, three editions being sold, so her new work will be looked forward to with much interest in literary and medical circles.

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PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England.
Part I.—1895. Ditto, Part II.—1897. Presented to both Houses of Parliament.

[FIRST NOTICE.]

THESE two volumes, which are presented to us in the unattractive form of two Blue Books of considerable bulk, contain information of inestimable value to the medical profession, especially to those members of the profession whose special duties lie in the department of State Medicine. We have noticed the bulk of these volumes, but it is right to add that the greater portion of both consists of detailed tables concerning each and all of the registration districts in England and Wales. These tables form the foundation and contain the proofs of the statements made in the Reports prefixed to the volumes. The Reports contain the pith of the whole matter, and convey all the information required by any reader, and we hope they may at some future time appear as a separate work by Dr. John Tatham, the accomplished Superintendent of Statistics at the English General Register Office.

The field of investigation which Dr. Tatham had before him is of unrivalled extent; no less than fifty-five years of the Vital Statistics of England and Wales are laid under contribution. No such opportunity for analysing, investigating, fixing data, and drawing conclusions has ever before been afforded to any vital statistician in the world, and no one has ever taken better advantage of his opportunities than has Dr. Tatham. The Reports before us appear under the modest titles of Letters to the Registrar-General. The first letter is styled "On the Mortality in England and Wales during the period of ten years, 1881-90;" the second "On the Mortality of Males engaged in certain occupations in the three years, 1890-92, and on an English Healthy District Life-Table for the ten years, 1881-90."

We have no hesitation in stating that these two letters are the most important essays on the branches of Vital Statistics to which they refer which have ever been published. We do not in any way wish to write of the manner the work has been done to the disparagement of Dr. Tatham's eminent predecessors, Dr. Farr and Dr. William Ogle. Those writers had nothing like the opportunities Dr. Tatham has had, and (especially Dr. Farr) had many difficulties to contend with which have not presented themselves to Dr. Tatham, and which, indeed, were removed by the efforts of his predecessors. Nevertheless, Dr. Tatham has had numerous difficulties to meet, many of which he has overcome, and a number of pitfalls to avoid. He seems to have thoroughly appreciated the difficulties, and, we think, has escaped the numerous traps always in the way of the vital statistician, in common with all statisticians.

Dr. Tatham does full justice to the work of his predecessors at Somerset House, and thus states the preparations which his predecessor, Dr. Ogle, had made for the work he has so ably carried out :—

“In the course of his preparations for taking the census of 1891, Dr. Ogle projected a scheme for ascertaining, by appeal to a basis of fact larger and more trustworthy than any previously available, the effect of certain definite occupations on the health and longevity of persons engaged therein. Complete records of the deaths of males over fifteen years of age, occurring in England and Wales during the three years 1890–2, were thought to be not more than sufficient for this investigation; accordingly these deaths, numbering more than half a million, have been extracted from the registers, and by means of the population figures obtained at the last census, the rates of mortality from several different causes have been worked out for a large number of occupations.”

Dr. Tatham thus acknowledges the assistance he has had from his medical brethren, and insists upon the importance of his work in regard to Preventive Medicine :—

“For the unique and valuable fund of information respecting deaths and their causes, which throughout the last half-century has been accumulating in the General Register Office, the State is manifestly indebted to the generous co-operation of the medical profession; failing which, the organisation of a system of vital statistics which should be worthy of the English nation would have

been impossible. It is therefore clearly incumbent on the officer who is responsible for the classification and analysis of the national mortality records to take care that every detail shall be utilised which may serve to increase our knowledge of the intimate nature of preventable diseases, and may thus tend to diminish their prevalence, as well as to mitigate their baneful effects on human health and life.

“Influenced by the above-mentioned considerations, I have striven to develop to the utmost the practical value of these volumes as a work of reference for students of Preventive Medicine: for I feel assured that to have succeeded in this endeavour would constitute the highest tribute I could offer to the memory of Dr. William Farr, whose life-long labours in behalf of that science which must ever be identified with his name still continue to influence beneficially the health conditions of his fellow-men. I trust that I may venture to entertain the hope that these volumes may be regarded as a not unworthy contribution to the series of supplementary reports, of which the first and second were written by Dr. Farr himself, and the third was from the pen of my eminent predecessor, Dr. Wm. Ogle.”

The hope expressed in the foregoing quotation has been amply fulfilled.

The first point discussed by Dr. Tatham is the changes which have taken place in the death-rate. These are somewhat striking, and are best stated in the writer's own words:—

“Changes in the Death-rate of England and Wales.”

“In the decennial period, 1871–80, there had occurred a mortality equal to 21·27 annual deaths, from all causes, in each thousand of the population. In the succeeding ten years—namely, the period to which the present volume relates—the mean annual proportion fell to 19·08 in a thousand. This decline in the mortality at all ages was shared by both sexes in almost equal proportions; the rate among males having fallen by 10·6 per cent., and that among females by 10·0 per cent. The figures show a decreased mortality among *females* at every one of the age-periods into which the span of life has been divided for the purposes of the Registrar-General's Reports, and among *males*, a decrease at all but the age-period 65–75 years. The experience of 1881–90, although agreeing with that of the preceding decennium in showing a greater reduction of mortality at the earlier ages, nevertheless differs from it in other important respects. For example, Dr. Ogle, commenting, in the last Decennial Supplement, on the varying incidence of mortality at the several ages, showed that whilst the rates had fallen at the earlier periods of life, they had risen at the later periods. As has been already stated, this was by no means the case in the decennium

under present notice, where a decrease was observed in both sexes at every age-period save one. Again, as compared with the mortality in the preceding decennium, the rate among females in 1871-80 was found to have decreased more rapidly than among males; this inequality has now been redressed, for in 1881-90 the male rate decreased actually faster than the female. Perhaps, however, the most significant difference between the two sets of figures lies in the fact that whereas in 1871-80 there had been a considerable rise in the male mortality after the age of 45, and in the female mortality after 55, recent figures show that this blemish has been almost completely removed, the only rise of mortality in the whole course of life during 1881-90 having been the trivial one of less than 1 per cent. at the age group 65-75 among males.

“In the recent decennium the mortality among infants under one year of age, which is generally accepted as the most sensitive test of the health of a given population, has shown a decline. The rate of mortality among infants of both sexes under the age of twelve months was equal to 142 per 1,000 births registered, as compared with 149 per 1,000 in the preceding decennium. In 1881-90 the infantile rate among males was equal to 155 per 1,000 births, and among females to 128 per 1,000; the rates in 1871-80 having been 163 and 134 respectively.”

While a considerable proportion of the diminished death-rate is attributed to improved sanitation, the author points out that some of it is due to the alterations in the age constitution of the population, owing to the diminution of the birth-rate from 35·6 per 1,000 in 1878 to 30·2 in 1890. These alterations are discussed, and it is pointed out that the diminution of the mortality is not so great as it would appear from the “crude” death-rates. If the age constitution of the population had been the same in the decennium 1871-80 as it was in 1881-90, the death-rate in the former period would have been 20·84 instead of 21·27.

Dr. Tatham next proceeds to consider the effect of this diminished death-rate on the expectation of life, and gives a new English Life-Table based on calculations made on the statistics for the decade 1881-90.

Our space does not permit of reprinting the valuable series of life tables contained in these volumes, but in order to present to our readers the main facts regarding the new and the old life-tables, and the changes which have taken place in the expectation of life in England and Wales for each sex, we give portions of the tables relating to this subject:—

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Comparison of Three English Life-Tables, based respectively upon the Mortality in 1838-54, in 1871-80, and in 1881-90.

MALES.

| Age | Mean After-lifetime (Expectation of Life) | | | Age | Mean After-lifetime (Expectation of Life) | | |
|-----|--|---------|---------|-----|--|---------|---------|
| | 1838-54 | 1871-80 | 1881-90 | | 1838-54 | 1871-80 | 1881-90 |
| 0 | 39·91 | 41·35 | 43·66 | 51 | 18·90 | 18·31 | 18·19 |
| 1 | 46·65 | 48·05 | 50·97 | 52 | 18·28 | 17·71 | 17·57 |
| 2 | 48·83 | 50·14 | 53·04 | 53 | 17·67 | 17·12 | 16·95 |
| 3 | 49·61 | 50·86 | 53·32 | 54 | 17·06 | 16·53 | 16·34 |
| 4 | 49·81 | 51·01 | 53·15 | 55 | 16·45 | 15·95 | 15·74 |
| 5 | 49·71 | 50·87 | 52·75 | 56 | 15·86 | 15·37 | 15·15 |
| 6 | 49·39 | 50·38 | 52·19 | 57 | 15·26 | 14·80 | 14·57 |
| 7 | 48·92 | 49·77 | 51·50 | 58 | 14·68 | 14·24 | 13·99 |
| 8 | 48·37 | 49·10 | 50·73 | 59 | 14·10 | 13·68 | 13·43 |
| 9 | 47·74 | 48·37 | 49·88 | 60 | 13·53 | 13·14 | 12·88 |
| 10 | 47·05 | 47·60 | 49·00 | 61 | 12·96 | 12·60 | 12·34 |
| 11 | 46·31 | 46·79 | 48·10 | 62 | 12·41 | 12·07 | 11·81 |
| 12 | 45·54 | 45·96 | 47·18 | 63 | 11·87 | 11·56 | 11·30 |
| 13 | 44·76 | 45·11 | 46·27 | 64 | 11·34 | 11·05 | 10·80 |
| 14 | 43·97 | 44·26 | 45·36 | 65 | 10·82 | 10·55 | 10·31 |
| 15 | 43·18 | 43·41 | 44·47 | 66 | 10·32 | 10·07 | 9·83 |
| 16 | 42·40 | 42·58 | 43·59 | 67 | 9·83 | 9·60 | 9·36 |
| 17 | 41·64 | 41·76 | 42·74 | 68 | 9·36 | 9·14 | 8·91 |
| 18 | 40·90 | 40·96 | 41·90 | 69 | 8·90 | 8·70 | 8·47 |
| 19 | 40·17 | 40·17 | 41·08 | 70 | 8·45 | 8·27 | 8·04 |
| 20 | 39·48 | 39·40 | 40·27 | 71 | 8·03 | 7·85 | 7·63 |
| 21 | 38·80 | 38·64 | 39·46 | 72 | 7·62 | 7·45 | 7·23 |
| 22 | 38·13 | 37·89 | 38·66 | 73 | 7·22 | 7·07 | 6·84 |
| 23 | 37·46 | 37·15 | 37·86 | 74 | 6·85 | 6·70 | 6·46 |
| 24 | 36·79 | 36·41 | 37·07 | 75 | 6·49 | 6·34 | 6·10 |
| 25 | 36·12 | 35·68 | 36·28 | 76 | 6·15 | 6·00 | 5·76 |
| 26 | 35·44 | 34·96 | 35·51 | 77 | 5·82 | 5·68 | 5·43 |
| 27 | 34·77 | 34·24 | 34·75 | 78 | 5·51 | 5·37 | 5·11 |
| 28 | 34·10 | 33·52 | 34·00 | 79 | 5·21 | 5·07 | 4·81 |
| 29 | 33·43 | 32·81 | 33·26 | 80 | 4·93 | 4·79 | 4·52 |
| 30 | 32·76 | 32·10 | 32·52 | 81 | 4·66 | 4·51 | 4·25 |
| 31 | 32·09 | 31·40 | 31·79 | 82 | 4·41 | 4·26 | 3·99 |
| 32 | 31·42 | 30·71 | 31·06 | 83 | 4·17 | 4·01 | 3·74 |
| 33 | 30·74 | 30·01 | 30·34 | 84 | 3·95 | 3·78 | 3·51 |
| 34 | 30·07 | 29·33 | 29·62 | 85 | 3·73 | 3·56 | 3·29 |
| 35 | 29·40 | 28·64 | 28·91 | 86 | 3·53 | 3·36 | 3·08 |
| 36 | 28·73 | 27·96 | 28·20 | 87 | 3·34 | 3·17 | 2·89 |
| 37 | 28·06 | 27·29 | 27·50 | 88 | 3·16 | 2·99 | 2·70 |
| 38 | 27·39 | 26·62 | 26·80 | 89 | 3·00 | 2·82 | 2·53 |
| 39 | 26·72 | 25·96 | 26·11 | 90 | 2·84 | 2·66 | 2·37 |
| 40 | 26·06 | 25·30 | 25·42 | 91 | 2·69 | 2·51 | 2·22 |
| 41 | 25·39 | 24·65 | 24·74 | 92 | 2·55 | 2·37 | 2·08 |
| 42 | 24·73 | 24·00 | 24·06 | 93 | 2·41 | 2·24 | 1·95 |
| 43 | 24·07 | 23·35 | 23·39 | 94 | 2·29 | 2·12 | 1·83 |
| 44 | 23·41 | 22·71 | 22·72 | 95 | 2·17 | 2·01 | 1·72 |
| 45 | 22·76 | 22·07 | 22·06 | 96 | 2·06 | 1·90 | 1·61 |
| 46 | 22·11 | 21·44 | 21·40 | 97 | 1·95 | 1·81 | 1·51 |
| 47 | 21·46 | 20·80 | 20·75 | 98 | 1·85 | 1·72 | 1·42 |
| 48 | 20·82 | 20·18 | 20·10 | 99 | 1·76 | 1·65 | 1·33 |
| 49 | 20·17 | 19·55 | 19·46 | 100 | 1·68 | 1·61 | 1·24 |
| 50 | 19·54 | 18·93 | 18·82 | | | | |

Comparison of Three English Life-Tables, based respectively upon the Mortality in 1838-54, in 1871-80, and in 1881-90.

FEMALES.

| Age | Mean After-lifetime Expectation of Life | | | Age | Mean After-lifetime (Expectation of Life) | | |
|-----|--|---------|---------|-----|--|---------|---------|
| | 1838-54 | 1871-80 | 1881-90 | | 1838-54 | 1871-80 | 1881-90 |
| 0 | 41·85 | 44·62 | 47·18 | 51 | 20·09 | 20·01 | 19·88 |
| 1 | 47·31 | 50·14 | 53·24 | 52 | 19·42 | 19·34 | 19·20 |
| 2 | 49·40 | 52·22 | 55·18 | 53 | 18·75 | 18·66 | 18·54 |
| 3 | 50·20 | 52·99 | 55·46 | 54 | 18·08 | 17·98 | 17·88 |
| 4 | 50·43 | 53·20 | 55·31 | 55 | 17·43 | 17·33 | 17·23 |
| 5 | 50·33 | 53·08 | 54·92 | 56 | 16·79 | 16·69 | 16·58 |
| 6 | 50·00 | 52·56 | 54·35 | 57 | 16·17 | 16·06 | 15·95 |
| 7 | 49·53 | 51·94 | 53·65 | 58 | 15·55 | 15·45 | 15·32 |
| 8 | 48·98 | 51·26 | 52·85 | 59 | 14·94 | 14·84 | 14·71 |
| 9 | 48·35 | 50·53 | 52·00 | 60 | 14·34 | 14·24 | 14·10 |
| 10 | 47·67 | 49·76 | 51·10 | 61 | 13·75 | 13·65 | 13·51 |
| 11 | 46·95 | 48·96 | 50·19 | 62 | 13·17 | 13·08 | 12·93 |
| 12 | 46·20 | 48·13 | 49·26 | 63 | 12·60 | 12·51 | 12·36 |
| 13 | 45·44 | 47·30 | 48·35 | 64 | 12·05 | 11·96 | 11·80 |
| 14 | 44·66 | 46·47 | 47·44 | 65 | 11·51 | 11·42 | 11·26 |
| 15 | 43·90 | 45·63 | 46·55 | 66 | 10·98 | 10·90 | 10·73 |
| 16 | 43·14 | 44·81 | 45·69 | 67 | 10·47 | 10·39 | 10·22 |
| 17 | 42·40 | 44·00 | 44·85 | 68 | 9·97 | 9·89 | 9·72 |
| 18 | 41·67 | 43·21 | 44·03 | 69 | 9·48 | 9·41 | 9·24 |
| 19 | 40·97 | 42·43 | 43·22 | 70 | 9·02 | 8·95 | 8·77 |
| 20 | 40·29 | 41·66 | 42·42 | 71 | 8·57 | 8·50 | 8·32 |
| 21 | 39·63 | 40·92 | 41·63 | 72 | 8·13 | 8·07 | 7·88 |
| 22 | 38·98 | 40·18 | 40·84 | 73 | 7·71 | 7·65 | 7·47 |
| 23 | 38·33 | 39·44 | 40·05 | 74 | 7·31 | 7·25 | 7·06 |
| 24 | 37·68 | 38·71 | 39·27 | 75 | 6·93 | 6·87 | 6·68 |
| 25 | 37·04 | 37·98 | 38·50 | 76 | 6·56 | 6·51 | 6·31 |
| 26 | 36·39 | 37·26 | 37·73 | 77 | 6·21 | 6·16 | 5·96 |
| 27 | 35·75 | 36·54 | 36·98 | 78 | 5·88 | 5·82 | 5·63 |
| 28 | 35·10 | 35·83 | 36·23 | 79 | 5·56 | 5·50 | 5·31 |
| 29 | 34·46 | 35·11 | 35·50 | 80 | 5·26 | 5·20 | 5·00 |
| 30 | 33·81 | 34·41 | 34·76 | 81 | 4·98 | 4·90 | 4·72 |
| 31 | 33·17 | 33·70 | 34·04 | 82 | 4·71 | 4·63 | 4·44 |
| 32 | 32·53 | 33·00 | 33·31 | 83 | 4·45 | 4·37 | 4·19 |
| 33 | 31·88 | 32·30 | 32·59 | 84 | 4·21 | 4·12 | 3·94 |
| 34 | 31·23 | 31·60 | 31·88 | 85 | 3·98 | 3·88 | 3·71 |
| 35 | 30·59 | 30·90 | 31·16 | 86 | 3·76 | 3·66 | 3·49 |
| 36 | 29·94 | 30·21 | 30·45 | 87 | 3·56 | 3·46 | 3·29 |
| 37 | 29·29 | 29·52 | 29·73 | 88 | 3·36 | 3·26 | 3·10 |
| 38 | 28·64 | 28·83 | 29·02 | 89 | 3·18 | 3·08 | 2·92 |
| 39 | 27·99 | 28·15 | 28·31 | 90 | 3·01 | 2·90 | 2·75 |
| 40 | 27·34 | 27·46 | 27·60 | 91 | 2·85 | 2·74 | 2·59 |
| 41 | 26·69 | 26·78 | 26·89 | 92 | 2·70 | 2·58 | 2·44 |
| 42 | 26·03 | 26·10 | 26·17 | 93 | 2·55 | 2·44 | 2·30 |
| 43 | 25·38 | 25·42 | 25·46 | 94 | 2·42 | 2·30 | 2·17 |
| 44 | 24·72 | 24·74 | 24·75 | 95 | 2·29 | 2·17 | 2·05 |
| 45 | 24·06 | 24·06 | 24·05 | 96 | 2·17 | 2·11 | 1·93 |
| 46 | 23·40 | 23·38 | 23·34 | 97 | 2·06 | 2·03 | 1·82 |
| 47 | 22·74 | 22·71 | 22·64 | 98 | 1·96 | 1·83 | 1·72 |
| 48 | 22·08 | 22·03 | 21·94 | 99 | 1·86 | 1·73 | 1·63 |
| 49 | 21·42 | 21·36 | 21·24 | 100 | 1·76 | 1·62 | 1·54 |
| 50 | 20·75 | 20·68 | 20·56 | | | | |

"A Life-Table based on the mortality in the ten years, 1871-80, was published in the last Decennial Report. The changes of the death-rate during the decennium 1881-90, which have already been noted, suggest that since 1880 a further increase in the average lifetime of the population has taken place. The new Life-Tables show that this has actually been the case.

The following remarks of Dr. Tatham show the main results arrived at from an examination of his new tables:—

"*Males.*—By the Table of 1838-54, a million males born are reduced to half a million during the 45th year of age; by the Table of 1871-80 this amount of reduction is not reached until the 48th year, and by the new Table it is further postponed until the 52nd year. At the end of the first year of age the number of survivors by the new Table occupies an intermediate position between the numbers by the two previous Tables; at every other age until 79 the new Table shows a larger number of survivors than is shown by either of the older Tables, from age 84 onwards the survivors are fewer by the new Table than by either of the others. This change is probably due, in part at least, to more accurate statement of age in recent than in earlier years.

"The average life-time of males, or the expectation of life at birth, which had been 39·91 years by the first of the three Life-Tables, and 41·35 years by the second, is further increased by the new Life-Table to 43·66 years; that is to say, a male exposed throughout life to the rate of mortality obtaining in England and Wales in 1881-90, would on an average live 2·31 years longer than he would have lived had he been subject to the rates prevalent in 1871-80, and 3·75 years longer than he would have lived had he been subject to the rates prevalent in 1838-54. In the last Decennial Report it was shown that the expectations of life among males by the Life-Table therein published were higher than those by the earlier Tables for ages below 19, equal thereto at age 19, and lower at all subsequent ages. The new Life-Table shows improved expectations of life, compared with those in the earlier Tables, up to 26 years of age; from age 27 until age 44 the expectations are lower than those in the first Table, but higher than those in the 1871-80 Table; for ages 45 and upwards the expectations of life are lower by the new Table than by either of the others.

"According to the first Life-Table, the 495,770 survivors at age 45, out of a million males born, will live about 11,284,000 years

of life, or an average of 22·76 years each ; according to the second Life-Table the 522,374 survivors at the same age will live about 11,529,000 years of life, or an average of 22·07 years each ; and according to the new Life-Table the 564,437 survivors at the same age will live 12,451,000 years of life, or an average of 22·06 years each. The successive additions to the working time of life may be shown in a striking form by considering the years lived between the ages 20 and 60. A short calculation shows that the average numbers of years lived between these limits of age by each male born are 20·92, 22·00, and 23·56, respectively, according to the three Life-Tables.

"Females.—By the two earlier Tables a million female children born were reduced to half a million in the 47th and 53rd years of age respectively ; by the New Table this amount of reduction is not reached until the 57th year. As in the case of males, the number of infants surviving at the end of the first year of life by the new Table is intermediate between the numbers similarly surviving by the earlier Tables. At all other ages until 85 inclusive the numbers surviving are greater by the new Table than by either of the others ; but as is also the case among males, the numbers of survivors at extreme ages diminish more rapidly by the new Table than by either of the older ones. The expectation of life at birth, which had been 41·85 and 44·62 years respectively in the earlier Tables, is further increased by the new Table to 47·18 years. The expectations at the several ages up to 44 years are greater by the new Table than by either of the others. At age 44 and again at age 45 the expectations of life by the three Tables are practically equal, being 24·72, 24·74, and 24·75 respectively at age 44, and 24·06, 24·06, and 24·05 at age 45. At all ages beyond 45 the expectations of life are less by the new Table than by either of the previous Tables. The average numbers of years lived between the ages 20 and 60 by each female born are 21·65, 23·48, and 25·12 by the three Life-Tables respectively.

Dr. Tatham, in his second volume, continues the discussion of the subject of life-tables, and devotes a section to the consideration of "A new Healthy District Life-Table." It is rather unfortunate for his readers that these two branches of the subject of life-tables should have been separated by various other matters—to which we shall refer in a future notice—and by an interval of two years ; but the exigencies of time, and of the arrangements of a large statistical

department, left our author no choice in the matter. We hope that, when these valuable papers come to be republished—which we trust they will—all the subjects connected with Life-Tables will be discussed continuously.

In introducing this branch of the subject Dr. Tatham writes:—

“The general death-rate of England and Wales in 1881-90 was almost exactly 19 per 1,000. After allowing for differences of age and sex constitution, about one-sixth part of the population were subject to death-rates differing from the mean rates by not more than 1 per 1,000, either in excess or in defect, one-third were subject to death-rates ranging from 17 to 21 per 1,000 (within 2 per 1,000 of the mean), and rather more than one-half were subject to death-rates ranging from 16 to 22 (within 3 per 1,000 of the mean). The death-rates of nearly one-fourth of the population ranged from 12 to 16 per 1,000, and those of an almost equal number ranged from 22 to 36.

“Speaking generally, districts with low rates of mortality may be called ‘healthy,’ while those with high rates must be considered ‘unhealthy.’ For the present it will be advisable to designate as healthy only those districts with the lowest death-rates, and to regard all other districts as more or less unhealthy, the excess in the death-rates over those of healthy districts constituting the measure of unhealthiness. But in any case only *comparative* healthiness can be dealt with, and the line dividing districts which are to be taken as healthy from those which are to be taken as unhealthy must always be an arbitrary one. . . .

“As might have been anticipated, the districts selected are either mainly rural, or are such as consist of small towns with rural surroundings.”

Details are given as to the areas selected as healthy.

Dr. Farr, in a paper read before the Royal Society in 1859, dealt with a life-table founded on 63 “healthiest districts” in England, having a death-rate of 17 per 1,000, or under. These districts contained a population of about a million according to the Census of 1851, and the life-table for these “healthy districts,” as Dr. Farr termed them, was founded on the mortality statistics for the years 1849-53:—

“Continued improvement in the public health since 1850 has made it possible to adopt a more exclusive standard of selection for the purposes of a new healthy district life-table, and at the same

time to place the table on a basis much wider than that which had been available for its predecessor; for, whereas in 1841-50 less than 6 per cent. of the total population lived in districts the crude death-rates in which were below 17.5 per 1,000, in 1881-90, on the other hand, no less than 25 per cent. of the population lived in districts the crude death-rates in which fell below 17.0 per 1,000, and $4\frac{1}{2}$ per cent. in districts the crude death rates in which did not reach 15.0 per 1,000."

It is impossible, in the space to which this article must necessarily be limited, to give *in extenso* all the carefully-elaborated details for correction as to age, sex, &c., which Dr. Tatham has carefully considered and applied; the result, however, is thus expressed by the author:—

"After every care has been used to secure an accurate presentation of the facts, 263 districts with a mean aggregate population of 4,606,503 persons, or about one-sixth of the whole population, had death-rates below 15 per 1,000 in 1881-90. The new Healthy District Life-Table has been constructed on the mortality experience of these 263 districts through the decennium. This table is therefore calculated on 46 millions years of life, a basis more than nine times as great as that of the older table. Had the line been drawn at districts with corrected rates under 14 per 1,000 in 1881-90, an aggregate of 122 districts, with more than 17 million years of life, would have been obtained; but on full consideration it was thought better to adopt the wider basis. The new Healthy District Life-Table, then, is a record of that sixth part of the population of the country which in 1881-90 experienced the lowest rates of mortality."

Dr. Tatham then refers to his well-known Manchester Life-Table, constructed when he was Medical Officer of Health of that city, which serves as a notable example of the splendid work to help the cause of the Public Health and promote State Medicine, which may be performed by an enlightened sanitary authority, under the advice of an able Medical Officer of Health. The leading columns of the Healthy District Life-Tables, under the heading of "Selected Healthy Districts," are placed in conjunction with similar columns taken from the life-tables of "England and Wales" for 1838-54, 1871-80, 1881-90, and "Manchester Township." We give here the most important—namely, the Expectation of Life-Table for Males and for Females:—

Expectations of Life : Comparison of Six Life Tables.—MALES.

| Age | Mean After-lifetime (Expectation of Life) | | | | | | Age |
|-----|---|---------|---------|-----------------------|-------------------------------|---------|-----|
| | England and Wales | | | M'chester Township | Selected Healthy Districts | | |
| | 1838-54 | 1871-80 | 1881-90 | | 1849-53 | 1881-90 | |
| 0 | 39·91 | 41·35 | 43·66 | 28·78 | 48·56 | 51·48 | 0 |
| 1 | 46·65 | 48·05 | 50·97 | 36·31 | 53·70 | 57·39 | 1 |
| 2 | 48·83 | 50·14 | 53·04 | 39·78 | 54·64 | 58·35 | 2 |
| 3 | 49·61 | 50·86 | 53·32 | 40·62 | 54·84 | 58·12 | 3 |
| 4 | 49·81 | 51·01 | 53·15 | 40·80 | 54·69 | 57·64 | 4 |
| 5 | 49·71 | 50·87 | 52·75 | 40·53 | 54·39 | 57·05 | 5 |
| 6 | 49·39 | 50·38 | 52·19 | 40·05 | 53·94 | 56·37 | 6 |
| 7 | 48·92 | 49·77 | 51·50 | 39·49 | 53·39 | 55·61 | 7 |
| 8 | 48·37 | 49·10 | 50·73 | 38·86 | 52·75 | 54·80 | 8 |
| 9 | 47·74 | 48·37 | 49·88 | 38·19 | 52·04 | 53·95 | 9 |
| 10 | 47·05 | 47·60 | 49·00 | 37·47 | 51·28 | 53·07 | 10 |
| 11 | 46·31 | 46·79 | 48·10 | 36·73 | 50·48 | 52·18 | 11 |
| 12 | 45·54 | 45·96 | 47·18 | 35·95 | 49·66 | 51·28 | 12 |
| 13 | 44·76 | 45·11 | 46·27 | 35·16 | 48·84 | 50·39 | 13 |
| 14 | 43·97 | 44·26 | 45·36 | 34·36 | 48·02 | 49·50 | 14 |
| 15 | 43·18 | 43·41 | 44·47 | 33·56 | 47·20 | 48·62 | 15 |
| 16 | 42·40 | 42·58 | 43·59 | 32·76 | 46·40 | 47·76 | 16 |
| 17 | 41·64 | 41·76 | 42·74 | 31·96 | 45·62 | 46·90 | 17 |
| 18 | 40·90 | 40·96 | 41·90 | 31·17 | 44·86 | 46·06 | 18 |
| 19 | 40·17 | 40·17 | 41·08 | 30·38 | 44·12 | 45·23 | 19 |
| 20 | 39·48 | 39·40 | 40·27 | 29·61 | 43·40 | 44·41 | 20 |
| 21 | 38·80 | 38·64 | 39·46 | 28·86 | 42·70 | 43·59 | 21 |
| 22 | 38·13 | 37·89 | 38·66 | 28·12 | 42·00 | 42·78 | 22 |
| 23 | 37·46 | 37·15 | 37·86 | 27·40 | 41·31 | 41·98 | 23 |
| 24 | 36·79 | 36·41 | 37·07 | 26·69 | 40·62 | 41·18 | 24 |
| 25 | 36·12 | 35·68 | 36·28 | 26·00 | 39·93 | 40·39 | 25 |
| 26 | 35·44 | 34·96 | 35·51 | 25·33 | 39·23 | 39·61 | 26 |
| 27 | 34·77 | 34·24 | 34·75 | 24·68 | 38·54 | 38·83 | 27 |
| 28 | 34·10 | 33·52 | 34·00 | 24·04 | 37·84 | 38·06 | 28 |
| 29 | 33·43 | 32·81 | 33·26 | 23·42 | 37·15 | 37·29 | 29 |
| 30 | 32·76 | 32·10 | 32·52 | 22·82 | 36·45 | 36·52 | 30 |
| 31 | 32·09 | 31·40 | 31·79 | 22·23 | 35·74 | 35·76 | 31 |
| 32 | 31·42 | 30·71 | 31·06 | 21·66 | 35·04 | 34·99 | 32 |
| 33 | 30·74 | 30·01 | 30·34 | 21·10 | 34·33 | 34·23 | 33 |
| 34 | 30·07 | 29·33 | 29·62 | 20·55 | 33·62 | 33·47 | 34 |
| 35 | 29·40 | 28·64 | 28·91 | 20·01 | 32·90 | 32·70 | 35 |
| 36 | 28·73 | 27·96 | 28·20 | 19·48 | 32·18 | 31·94 | 36 |
| 37 | 28·06 | 27·29 | 27·50 | 18·95 | 31·46 | 31·18 | 37 |
| 38 | 27·39 | 26·62 | 26·80 | 18·43 | 30·74 | 30·43 | 38 |
| 39 | 26·72 | 25·96 | 26·11 | 17·91 | 30·02 | 29·67 | 39 |
| 40 | 26·06 | 25·30 | 25·42 | 17·39 | 29·29 | 28·92 | 40 |
| 41 | 25·39 | 24·65 | 24·74 | 16·88 | 28·56 | 28·17 | 41 |
| 42 | 24·73 | 24·00 | 24·06 | 16·38 | 27·84 | 27·42 | 42 |
| 43 | 24·07 | 23·35 | 23·39 | 15·89 | 27·11 | 26·67 | 43 |
| 44 | 23·41 | 22·71 | 22·72 | 15·40 | 26·38 | 25·93 | 44 |
| 45 | 22·76 | 22·07 | 22·06 | 14·93 | 25·65 | 25·19 | 45 |
| 46 | 22·11 | 21·44 | 21·40 | 14·46 | 24·92 | 24·45 | 46 |
| 47 | 21·46 | 20·80 | 20·75 | 14·01 | 24·20 | 23·71 | 47 |
| 48 | 20·82 | 20·18 | 20·10 | 13·58 | 23·47 | 22·98 | 48 |
| 49 | 20·17 | 19·55 | 19·46 | 13·17 | 22·75 | 22·25 | 49 |

Comparison of Six Life Tables.—MALES—continued.

| Age | Mean After-lifetime (Expectation of Life) | | | | | | Age |
|-----|---|---------|---------|--------------------|----------------------------|---------|-----|
| | England and Wales | | | M'chester Township | Selected Healthy Districts | | |
| | 1838-54 | 1871-80 | 1881-90 | | 1849-53 | 1881-90 | |
| 50 | 19.54 | 18.93 | 18.82 | 12.77 | 22.03 | 21.53 | 50 |
| 51 | 18.90 | 18.31 | 18.19 | 12.39 | 21.32 | 20.81 | 51 |
| 52 | 18.28 | 17.71 | 17.57 | 12.02 | 20.61 | 20.10 | 52 |
| 53 | 17.67 | 17.12 | 16.95 | 11.66 | 19.90 | 19.39 | 53 |
| 54 | 17.06 | 16.53 | 16.34 | 11.31 | 19.19 | 18.69 | 54 |
| 55 | 16.45 | 15.95 | 15.74 | 10.96 | 18.49 | 18.00 | 55 |
| 56 | 15.86 | 15.37 | 15.15 | 10.62 | 17.79 | 17.31 | 56 |
| 57 | 15.26 | 14.80 | 14.57 | 10.28 | 17.10 | 16.63 | 57 |
| 58 | 14.68 | 14.24 | 13.99 | 9.93 | 16.41 | 15.96 | 58 |
| 59 | 14.10 | 13.68 | 13.43 | 9.58 | 15.73 | 15.30 | 59 |
| 60 | 13.53 | 13.14 | 12.88 | 9.24 | 15.06 | 14.66 | 60 |
| 61 | 12.96 | 12.60 | 12.34 | 8.88 | 14.41 | 14.02 | 61 |
| 62 | 12.41 | 12.07 | 11.81 | 8.53 | 13.78 | 13.40 | 62 |
| 63 | 11.87 | 11.56 | 11.30 | 8.18 | 13.17 | 12.79 | 63 |
| 64 | 11.34 | 11.05 | 10.80 | 7.83 | 12.58 | 12.19 | 64 |
| 65 | 10.82 | 10.55 | 10.31 | 7.48 | 12.00 | 11.60 | 65 |
| 66 | 10.32 | 10.07 | 9.83 | 7.14 | 11.44 | 11.03 | 66 |
| 67 | 9.83 | 9.60 | 9.36 | 6.82 | 10.90 | 10.47 | 67 |
| 68 | 9.36 | 9.14 | 8.91 | 6.50 | 10.37 | 9.92 | 68 |
| 69 | 8.90 | 8.70 | 8.47 | 6.20 | 9.86 | 9.39 | 69 |
| 70 | 8.45 | 8.27 | 8.04 | 5.91 | 9.37 | 8.88 | 70 |
| 71 | 8.03 | 7.85 | 7.63 | 5.64 | 8.89 | 8.38 | 71 |
| 72 | 7.62 | 7.45 | 7.23 | 5.39 | 8.43 | 7.90 | 72 |
| 73 | 7.22 | 7.07 | 6.84 | 5.16 | 7.98 | 7.43 | 73 |
| 74 | 6.85 | 6.70 | 6.46 | 5.94 | 7.56 | 6.99 | 74 |
| 75 | 6.49 | 6.34 | 6.10 | 4.74 | 7.15 | 6.56 | 75 |
| 76 | 6.15 | 6.00 | 5.76 | 4.56 | 6.76 | 6.15 | 76 |
| 77 | 5.82 | 5.63 | 5.43 | 4.40 | 6.39 | 5.76 | 77 |
| 78 | 5.51 | 5.37 | 5.11 | 4.25 | 6.03 | 5.39 | 78 |
| 79 | 5.21 | 5.07 | 4.81 | 4.11 | 5.69 | 5.03 | 79 |
| 80 | 4.93 | 4.79 | 4.52 | 3.98 | 5.37 | 4.70 | 80 |
| 81 | 4.66 | 4.51 | 4.25 | 3.86 | 5.07 | 4.39 | 81 |
| 82 | 4.41 | 4.26 | 3.99 | 3.76 | 4.78 | 4.09 | 82 |
| 83 | 4.17 | 4.01 | 3.74 | 3.65 | 4.51 | 3.81 | 83 |
| 84 | 3.95 | 3.78 | 3.51 | 3.55 | 4.25 | 3.55 | 84 |
| 85 | 3.73 | 3.56 | 3.29 | 3.45 | 4.00 | 3.30 | 85 |
| 86 | 3.53 | 3.36 | 3.08 | 3.34 | 3.78 | 3.07 | 86 |
| 87 | 3.34 | 3.17 | 2.89 | 3.24 | 3.56 | 2.86 | 87 |
| 88 | 3.16 | 2.99 | 2.70 | 3.14 | 3.36 | 2.66 | 88 |
| 89 | 3.00 | 2.82 | 2.53 | 3.04 | 3.17 | 2.48 | 89 |
| 90 | 2.84 | 2.66 | 2.37 | 2.94 | 2.99 | 2.31 | 90 |
| 91 | 2.69 | 2.51 | 2.22 | 2.83 | 2.82 | 2.15 | 91 |
| 92 | 2.55 | 2.37 | 2.08 | 2.72 | 2.66 | 2.00 | 92 |
| 93 | 2.41 | 2.24 | 1.95 | 2.60 | 2.52 | 1.86 | 93 |
| 94 | 2.29 | 2.12 | 1.83 | 2.46 | 2.39 | 1.74 | 94 |
| 95 | 2.17 | 2.01 | 1.72 | 2.29 | 2.25 | 1.62 | 95 |
| 96 | 2.06 | 1.90 | 1.61 | 2.08 | 2.13 | 1.52 | 96 |
| 97 | 1.95 | 1.81 | 1.51 | 1.79 | 2.00 | 1.42 | 97 |
| 98 | 1.85 | 1.72 | 1.42 | 1.40 | 1.89 | 1.33 | 98 |
| 99 | 1.76 | 1.65 | 1.33 | 0.83 | 1.78 | 1.25 | 99 |

Expectations of Life : Comparison of Six Life-Tables.—FEMALES.

| Age | Mean After-lifetime (Expectation of Life) | | | | | | Age |
|-----|---|---------|---------|-----------------------|-------------------------------|---------|-----|
| | England and Wales | | | M'chester Township | Selected Healthy Districts | | |
| | 1838-54 | 1871-80 | 1881-90 | | 1849-53 | 1881-90 | |
| 0 | 41·85 | 44·62 | 47·18 | 32·67 | 49·45 | 54·04 | 0 |
| 1 | 47·31 | 50·14 | 53·24 | 39·33 | 53·47 | 58·57 | 1 |
| 2 | 49·40 | 52·22 | 55·18 | 42·62 | 54·21 | 59·36 | 2 |
| 3 | 50·20 | 52·99 | 55·46 | 43·54 | 54·41 | 59·11 | 3 |
| 4 | 50·43 | 53·20 | 55·31 | 43·81 | 54·25 | 58·62 | 4 |
| 5 | 50·33 | 53·08 | 54·92 | 43·66 | 53·93 | 58·01 | 5 |
| 6 | 50·00 | 52·56 | 54·35 | 43·30 | 53·48 | 57·31 | 6 |
| 7 | 49·53 | 51·94 | 53·65 | 42·82 | 52·93 | 56·54 | 7 |
| 8 | 48·98 | 51·26 | 52·85 | 42·26 | 52·30 | 55·72 | 8 |
| 9 | 48·35 | 50·53 | 52·00 | 41·63 | 51·61 | 54·88 | 9 |
| 10 | 47·67 | 49·76 | 51·10 | 40·94 | 50·88 | 54·01 | 10 |
| 11 | 46·95 | 48·96 | 50·19 | 40·21 | 50·12 | 53·14 | 11 |
| 12 | 46·20 | 48·13 | 49·26 | 39·45 | 49·34 | 52·27 | 12 |
| 13 | 45·44 | 47·30 | 48·35 | 38·66 | 48·57 | 51·39 | 13 |
| 14 | 44·66 | 46·47 | 47·44 | 37·86 | 47·80 | 50·53 | 14 |
| 15 | 43·90 | 45·63 | 46·55 | 37·05 | 47·04 | 49·68 | 15 |
| 16 | 43·14 | 44·81 | 45·69 | 36·24 | 46·29 | 48·84 | 16 |
| 17 | 42·40 | 44·00 | 44·85 | 35·44 | 45·57 | 48·02 | 17 |
| 18 | 41·67 | 43·21 | 44·03 | 34·64 | 44·86 | 47·21 | 18 |
| 19 | 40·97 | 42·43 | 43·22 | 33·86 | 44·17 | 46·41 | 19 |
| 20 | 40·29 | 41·66 | 42·42 | 33·08 | 43·50 | 45·62 | 20 |
| 21 | 39·63 | 40·92 | 41·63 | 32·32 | 42·83 | 44·83 | 21 |
| 22 | 38·98 | 40·18 | 40·84 | 31·57 | 42·16 | 44·04 | 22 |
| 23 | 38·33 | 39·44 | 40·05 | 30·84 | 41·50 | 43·26 | 23 |
| 24 | 37·68 | 38·71 | 39·27 | 30·12 | 40·84 | 42·48 | 24 |
| 25 | 37·04 | 37·98 | 38·50 | 29·41 | 40·17 | 41·71 | 25 |
| 26 | 36·39 | 37·26 | 37·73 | 28·72 | 39·51 | 40·94 | 26 |
| 27 | 35·75 | 36·54 | 36·93 | 28·03 | 38·85 | 40·18 | 27 |
| 28 | 35·10 | 35·83 | 36·23 | 27·36 | 38·18 | 39·42 | 28 |
| 29 | 34·46 | 35·11 | 35·50 | 26·70 | 37·52 | 38·67 | 29 |
| 30 | 33·81 | 34·41 | 34·76 | 26·04 | 36·85 | 37·91 | 30 |
| 31 | 33·17 | 33·70 | 34·04 | 25·40 | 36·17 | 37·16 | 31 |
| 32 | 32·53 | 33·00 | 33·31 | 24·76 | 35·50 | 36·41 | 32 |
| 33 | 31·88 | 32·30 | 32·59 | 24·13 | 34·82 | 35·66 | 33 |
| 34 | 31·23 | 31·60 | 31·88 | 23·51 | 34·14 | 34·91 | 34 |
| 35 | 30·59 | 30·90 | 31·16 | 22·90 | 33·46 | 34·16 | 35 |
| 36 | 29·94 | 30·21 | 30·45 | 22·29 | 32·77 | 33·41 | 36 |
| 37 | 29·29 | 29·52 | 29·73 | 21·69 | 32·08 | 32·65 | 37 |
| 38 | 28·64 | 28·83 | 29·02 | 21·10 | 31·39 | 31·90 | 38 |
| 39 | 27·99 | 28·15 | 28·31 | 20·52 | 30·69 | 31·14 | 39 |
| 40 | 27·34 | 27·46 | 27·60 | 19·95 | 30·00 | 30·38 | 40 |
| 41 | 26·69 | 26·78 | 26·89 | 19·38 | 29·29 | 29·62 | 41 |
| 42 | 26·03 | 26·10 | 26·17 | 18·83 | 28·59 | 28·86 | 42 |
| 43 | 25·38 | 25·42 | 25·46 | 18·28 | 27·88 | 28·09 | 43 |
| 44 | 24·72 | 24·74 | 24·75 | 17·73 | 27·17 | 27·32 | 44 |
| 45 | 24·06 | 24·06 | 24·05 | 17·20 | 26·46 | 26·56 | 45 |
| 46 | 23·40 | 23·38 | 23·34 | 16·67 | 25·75 | 25·79 | 46 |
| 47 | 22·74 | 22·71 | 22·64 | 16·15 | 25·03 | 25·03 | 47 |
| 48 | 22·08 | 22·03 | 21·94 | 15·63 | 24·31 | 24·26 | 48 |
| 49 | 21·42 | 21·36 | 21·24 | 15·12 | 23·59 | 23·50 | 49 |

Comparison of Six Life-Tables.—FEMALES—continued.

| Age | Mean After-lifetime (Expectation of Life) | | | | | | Age |
|-----|---|---------|---------|-----------------------|-------------------------------|---------|-----|
| | England and Wales | | | M'chester Township | Selected Healthy Districts | | |
| | 1838-54 | 1871-80 | 1881-90 | | 1881-90 | 1849-53 | |
| 50 | 20.75 | 20.68 | 20.56 | 14.62 | 22.87 | 22.75 | 50 |
| 51 | 20.09 | 20.01 | 19.88 | 14.12 | 22.15 | 22.00 | 51 |
| 52 | 19.42 | 19.34 | 19.20 | 13.64 | 21.42 | 21.25 | 52 |
| 53 | 18.75 | 18.66 | 18.54 | 13.16 | 20.70 | 20.52 | 53 |
| 54 | 18.08 | 17.98 | 17.88 | 12.70 | 19.97 | 19.79 | 54 |
| 55 | 17.43 | 17.33 | 17.23 | 12.25 | 19.24 | 19.06 | 55 |
| 56 | 16.79 | 16.69 | 16.58 | 11.81 | 18.51 | 18.34 | 56 |
| 57 | 16.17 | 16.06 | 15.95 | 11.39 | 17.77 | 17.63 | 57 |
| 58 | 15.55 | 15.45 | 15.32 | 10.98 | 17.06 | 16.93 | 58 |
| 59 | 14.94 | 14.84 | 14.71 | 10.59 | 16.36 | 16.24 | 59 |
| 60 | 14.34 | 14.24 | 14.10 | 10.21 | 15.69 | 15.56 | 60 |
| 61 | 13.75 | 13.65 | 13.51 | 9.85 | 15.04 | 14.90 | 61 |
| 62 | 13.17 | 13.08 | 12.93 | 9.50 | 14.40 | 14.24 | 62 |
| 63 | 12.60 | 12.51 | 12.36 | 9.17 | 13.78 | 13.60 | 63 |
| 64 | 12.05 | 11.96 | 11.80 | 8.85 | 13.17 | 12.98 | 64 |
| 65 | 11.51 | 11.42 | 11.26 | 8.54 | 12.58 | 12.36 | 65 |
| 66 | 10.98 | 10.90 | 10.73 | 8.25 | 12.01 | 11.76 | 66 |
| 67 | 10.47 | 10.39 | 10.22 | 7.97 | 11.44 | 11.18 | 67 |
| 68 | 9.97 | 9.89 | 9.72 | 7.70 | 10.90 | 10.61 | 68 |
| 69 | 9.48 | 9.41 | 9.24 | 7.44 | 10.37 | 10.06 | 69 |
| 70 | 9.02 | 8.95 | 8.77 | 7.18 | 9.85 | 9.53 | 70 |
| 71 | 8.57 | 8.50 | 8.32 | 6.94 | 9.35 | 9.02 | 71 |
| 72 | 8.13 | 8.07 | 7.88 | 6.70 | 8.87 | 8.52 | 72 |
| 73 | 7.71 | 7.65 | 7.47 | 6.47 | 8.40 | 8.04 | 73 |
| 74 | 7.31 | 7.25 | 7.06 | 6.24 | 7.95 | 7.58 | 74 |
| 75 | 6.93 | 6.87 | 6.68 | 6.03 | 7.52 | 7.14 | 75 |
| 76 | 6.56 | 6.51 | 6.31 | 5.82 | 7.11 | 6.72 | 76 |
| 77 | 6.21 | 6.16 | 5.96 | 5.61 | 6.72 | 6.32 | 77 |
| 78 | 5.88 | 5.82 | 5.63 | 5.41 | 6.34 | 5.94 | 78 |
| 79 | 5.56 | 5.50 | 5.31 | 5.21 | 5.98 | 5.57 | 79 |
| 80 | 5.26 | 5.20 | 5.00 | 5.02 | 5.64 | 5.23 | 80 |
| 81 | 4.98 | 4.90 | 4.72 | 4.83 | 5.32 | 4.90 | 81 |
| 82 | 4.71 | 4.63 | 4.44 | 4.65 | 5.01 | 4.59 | 82 |
| 83 | 4.45 | 4.37 | 4.19 | 4.47 | 4.72 | 4.30 | 83 |
| 84 | 4.21 | 4.12 | 3.94 | 4.30 | 4.44 | 4.03 | 84 |
| 85 | 3.98 | 3.88 | 3.71 | 4.13 | 4.19 | 3.77 | 85 |
| 86 | 3.76 | 3.66 | 3.49 | 3.96 | 3.94 | 3.53 | 86 |
| 87 | 3.56 | 3.46 | 3.29 | 3.80 | 3.71 | 3.30 | 87 |
| 88 | 3.36 | 3.26 | 3.10 | 3.64 | 3.50 | 3.09 | 88 |
| 89 | 3.18 | 3.08 | 2.92 | 3.49 | 3.30 | 2.89 | 89 |
| 90 | 3.01 | 2.90 | 2.75 | 3.34 | 3.11 | 2.71 | 90 |
| 91 | 2.85 | 2.74 | 2.59 | 3.19 | 2.93 | 2.54 | 91 |
| 92 | 2.70 | 2.58 | 2.44 | 3.04 | 2.76 | 2.37 | 92 |
| 93 | 2.55 | 2.44 | 2.30 | 2.90 | 2.61 | 2.23 | 93 |
| 94 | 2.42 | 2.30 | 2.17 | 2.76 | 2.46 | 2.09 | 94 |
| 95 | 2.20 | 2.17 | 2.05 | 2.62 | 2.33 | 1.96 | 95 |
| 96 | 2.17 | 2.11 | 1.93 | 2.47 | 2.19 | 1.84 | 96 |
| 97 | 2.06 | 2.03 | 1.82 | 2.31 | 2.08 | 1.72 | 97 |
| 98 | 1.96 | 1.83 | 1.72 | 2.14 | 1.96 | 1.62 | 98 |
| 99 | 1.86 | 1.73 | 1.63 | 1.93 | 1.84 | 1.53 | 99 |

"The most striking differences between the several life-tables are seen in the figures relating to young children ; this is illustrated by the subjoined table, which shows the numbers, out of 100,000 of each sex born, who die at ages under 5 years.

| | England and Wales | | | Manchester Township, | Selected Healthy Districts | |
|-----------|-------------------|---------|---------|----------------------|----------------------------|---------|
| | 1838-54 | 1871-80 | 1881-90 | 1881-90 | 1849-53 | 1881-90 |
| Males - | 27,628 | 26,593 | 24,851 | 37,674 | 18,590 | 17,314 |
| Females - | 24,945 | 23,738 | 21,676 | 33,677 | 16,444 | 14,483 |

"Using as a standard the deaths in the healthy districts in 1881-90, the mortality of males at these ages during the same period in England and Wales as a whole was 44 per cent. in excess, and in Manchester township it was 118 per cent. in excess. In the case of females the excess was still greater, being 50 per cent. in England and Wales, and 133 per cent. in Manchester township.

"According to the experience of the English life-table, it appears that 100,000 males born are reduced by death to 75,149 by the end of the fifth year, and that 100,000 females born are reduced by death to 78,324 at the same age. It appears, further, that in the healthy districts the same amounts of reduction are not reached until the age of 29 years among males, and until the age of 27 years among females. In Manchester township 100,000 males born are reduced to 62,326, and 100,000 females born are reduced to 66,323, at 5 years of age ; but in the healthy districts these amounts of reduction are not reached until age 50 among males and age 48 among females.

"This saving of the lives of children in healthy districts is shown in another way by the expectations of life. In all the life-tables the expectation increases from birth until from two to four years of age, after which it decreases more or less steadily year by year. The cause of this is to be found in the comparatively heavy mortality in the earlier years of life. Thus, in the healthy districts, about 12 per cent. of the male children born die under one year of age, having lived an average of about one-third of a year each ; the 88 per cent. who survive at one year of age live on an average nearly $57\frac{1}{2}$ years more ; that is to say, they die at a mean age of nearly $58\frac{1}{2}$ years. The mean age at death of 100 persons of whom 12 live one-third of a year each, and 88 live $58\frac{1}{2}$ years each, is easily found to be $51\frac{1}{2}$ years.

which is the expectation of life of males in the healthy districts, at the moment of birth.

"As a general rule the expectation of life decreases as age advances. An increase of the expectation in passing from one age to a subsequent age indicates special risks of mortality in the interval. Persons who escape those risks thereby gained improved chances of future lifetime. The only example which the life-tables present of an expectation of life increasing as age advances is in the case of young children. From birth onwards the expectation of life at first increases, and afterwards decreases year by year through the remainder of life; but, the better the health conditions represented by the life-table are, the less is the increase of the expectation, the sooner is the age of maximum expectation attained, and the sooner also is an age reached at which the expectation falls below that at birth. These points are illustrated by the following table:—

| | England and Wales | | | Manchester Township 1881-90 | Selected Healthy Districts | |
|---|-------------------|---------|---------|-----------------------------------|-------------------------------|---------|
| | 1838-54 | 1871-80 | 1881-90 | | 1849-53 | 1881-90 |
| MALES | | | | | | |
| Expectation of life at birth - | 39·91 | 41·35 | 43·66 | 28·78 | 48·56 | 51·48 |
| Age of maximum expectation - | 4 | 4 | 3 | 4 | 3 | 2 |
| Increase of expecta- tion, from birth to age of maximum - | 9·90 | 9·66 | 9·66 | 12·02 | 6·28 | 6·87 |
| Per cent. | 24·8 | 23·4 | 22·1 | 41·8 | 12·9 | 13·3 |
| Year of life during which the expectation first falls below that at birth - | 20th | 18th | 16th | 22nd | 14th | 12th |
| FEMALES | | | | | | |
| Expectation of life at birth - | 41·85 | 44·62 | 47·18 | 32·67 | 49·45 | 54·04 |
| Age of maximum expectation - | 4 | 4 | 3 | 4 | 3 | 2 |
| Increase of expecta- tion, from birth to age of maximum - | 8·58 | 8·58 | 8·28 | 11·14 | 4·96 | 5·32 |
| Per cent. | 20·5 | 19·2 | 17·6 | 34·1 | 10·0 | 9·8 |
| Year of life during which the expectation first falls below that at birth - | 18th | 17th | 15th | 21st | 12th | 10th |

"An example from this table will illustrate the rule stated above: In 1881-90 the expectation of life of males in England and Wales was 43·66 years at birth, increasing to a maximum at 3 years of age, by which time it had received an increment of 9·66 years, or 22·1 per cent. of the expectation at birth; after age 3 the expectation decreased, but did not fall below its original level until the 16th year of age. In the healthy districts the expectation was 51·48 years at birth, increasing to a maximum at 2 years of age, by which time it had received an increment of 6·87 years, or 13·3 per cent. only; after age 2 the expectation decreased and fell below its original level in the 12th year of age.

“Even under the most favourable circumstances the mortality of infants under one year of age is very high. Reference to several life-tables shows that the same rate of death is not again experienced until the age of about 80 years. But the mortality in the first year of life is by no means evenly spread over that year—about half of it occurs in the first three months. The following table shows the survivors at three months, six months, and one year, out of 100,000 of each sex born in 1881-90; the deaths in the intervals are likewise shown:—

| — | Born and Surviving at each Age | | | Dying in each interval of Age | | |
|-------------|--------------------------------|---------------------|----------------------------|-------------------------------|---------------------|----------------------------|
| | England and Wales | Manchester Township | Selected Healthy Districts | England and Wales | Manchester Township | Selected Healthy Districts |
| MALES | | | | | | |
| Born - | 100,000 | 100,000 | 100,000 | 7,880 | 10,519 | 6,394 |
| 3 months - | 92,120 | 89,481 | 93,606 | 3,225 | 4,894 | 2,161 |
| 6 months - | 88,895 | 84,537 | 91,415 | 4,999 | 7,661 | 3,359 |
| 12 months - | 83,896 | 76,926 | 88,086 | — | — | — |
| FEMALES | | | | | | |
| Born - | 100,000 | 100,000 | 100,000 | 6,209 | 8,199 | 4,903 |
| 3 months - | 93,791 | 91,801 | 95,097 | 2,653 | 4,315 | 1,718 |
| 6 months - | 91,138 | 87,486 | 93,379 | 4,251 | 6,645 | 2,729 |
| 12 months - | 86,887 | 80,841 | 90,650 | — | — | — |

“The figures in the last three columns show that, as measured by the ratio of deaths, the advantage of being born in a healthy district, great as it is in the first three months of life, is greater still in the remainder of the first year. As compared with the selected healthy districts, the whole country shows an excess of about one-fourth part, and Manchester township shows an excess of about two-thirds, in the mortality during the first three months of life; whilst, during the remainder of the first year of life, the proportional excess is in each case about doubled. These results curiously confirm some remarks in the Registrar-General’s 54th Annual Report. In that report two life-tables for the

first year of life were given, the one being based on the mortality in 1889-90-91 in three rural counties—Herefordshire, Wiltshire, and Dorsetshire; and the other on the mortality in three towns—Preston, Leicester, and Blackburn—which towns were selected on account of their high infantile mortality. The ages at death of all children under one year of age in these counties and towns respectively were abstracted in separate days up to one week, in separate weeks up to one month, and in separate months up to one year. From these facts the numbers of survivors out of 100,000 born were calculated at 1, 2, 3, &c., days, at 1, 2, 3, and 4 weeks, and at 1, 2, 3, &c., months. The tables are so interesting in connection with the present subject that it has been thought well to reprint them here:—

| Age | Of 100,000 born the Numbers surviving at each age | | Deaths in each successive Interval of Age | | Annual Death-rates per 1,000 living in each successive Interval of Age | | Death-rates in Towns to Death-rates in Counties taken as 100 |
|---------------|---|----------------------|---|----------------------|--|----------------------|--|
| | Three Rural Counties | Three Selected Towns | Three Rural Counties | Three Selected Towns | Three Rural Counties | Three Selected Towns | |
| Days | | | | | | | |
| 0 | 100,000 | 100,000 | 1,002 | 1,198 | 3,674 | 4,399 | 120 |
| 1 | 98,998 | 98,802 | 296 | 485 | 1,094 | 1,797 | 164 |
| 2 | 98,702 | 98,317 | 281 | 344 | 1,042 | 1,279 | 123 |
| 3 | 98,421 | 97,973 | 232 | 236 | 859 | 879 | 102 |
| 4 | 98,189 | 97,737 | 152 | 144 | 565 | 539 | 95 |
| 5 | 98,037 | 97,593 | 120 | 130 | 448 | 488 | 109 |
| 6 | 97,917 | 97,463 | 89 | 109 | 297 | 405 | 136 |
| 7 | 97,837 | 97,354 | — | — | — | — | — |
| Weeks | | | | | | | |
| 0 | 100,000 | 100,000 | 2,163 | 2,646 | 1,145 | 1,406 | 123 |
| 1 | 97,837 | 97,354 | 473 | 773 | 253 | 416 | 164 |
| 2 | 97,364 | 96,581 | 462 | 832 | 247 | 451 | 183 |
| 3 | 96,902 | 95,749 | 331 | 646 | 179 | 353 | 197 |
| 4 | 96,571 | 95,103 | — | — | — | — | — |
| Months | | | | | | | |
| 0 | 100,000 | 100,000 | 3,488 | 4,947 | 804 | 1,021 | 127 |
| 1 | 96,512 | 95,053 | 985 | 2,130 | 123 | 272 | 221 |
| 2 | 95,527 | 92,923 | 707 | 2,049 | 89 | 268 | 301 |
| 3 | 94,820 | 90,874 | 673 | 1,967 | 85 | 262 | 308 |
| 4 | 94,147 | 89,907 | 618 | 1,749 | 79 | 239 | 303 |
| 5 | 93,529 | 87,158 | 461 | 1,584 | 59 | 220 | 373 |
| 6 | 93,068 | 85,574 | 483 | 1,475 | 62 | 209 | 337 |
| 7 | 92,585 | 84,099 | 483 | 1,226 | 63 | 176 | 279 |
| 8 | 92,102 | 82,873 | 454 | 1,317 | 59 | 192 | 325 |
| 9 | 91,648 | 81,556 | 476 | 1,220 | 62 | 181 | 292 |
| 10 | 91,172 | 80,336 | 455 | 1,110 | 60 | 167 | 278 |
| 11 | 90,717 | 79,226 | 434 | 1,029 | 57 | 157 | 275 |
| 12 | 90,283 | 78,197 | — | — | — | — | — |

"Although males and females are not separately dealt with in these tables, it will be seen that in the three age-groups 0-3 months, 3 months-6 months, and 6 months-1 year, the mortality in the three rural counties corresponds very closely with that in the healthy districts, while the mortality in the three towns is a little greater than that in Manchester township. The points of contrast between the rural and the town table are thus set forth in the report referred to:—

"In the first place, the aggregate infantile mortality is more than twice as high in the three towns as it is in the three rural counties, the exact figures being 21,803 deaths in the former to 9,717 in the latter, in each case out of 100,000 births.

"Secondly, the town rate is higher than the rural rate, not only in the aggregate for the year, but for each fraction of the year, with the exception—possibly but not certainly due to the insufficiently large basis of calculation—of the fourth, fifth, and sixth days of the first week, when the rates are practically equal.

"Thirdly, the periods when the town rates are most in excess of the rural rates are not the earliest weeks or months of infancy but the later months. In the first week of life the town rate exceeds the rural rate by 23 per cent., in the second week by 64 per cent., in the third week by 83 per cent., and in the fourth week by 97 per cent., showing a progressive or accumulative increase in the deleterious effects of town conditions as compared with rural conditions upon infantile life. The same result comes out when the rates for successive months in the counties and towns are examined. In the first month the town mortality is 27 per cent. above the rural rate, in the second month 121 per cent. above it; and the excess then goes on increasing until in the sixth month it amounts to no less than 273 per cent. This is the month in which the difference is greatest, though it remains throughout the rest of the year at a not very much lower point.

"The conditions of life, then, in such towns as Preston, Leicester and Blackburn, extremely destructive as they are throughout to infants in the first year of life, are much less so in the earliest periods of that year than later on, and are especially destructive after the second month is over."

"The close agreement, at ages where comparison is possible, of the figures from which the above deductions were drawn, with the figures now obtained on a larger basis, is remarkable. Each set of facts independently strengthens the other; and there is little room for doubt that they represent with substantial accuracy the variations in infant mortality under favourable and under unfavourable conditions."

Tables have been constructed with the object of exhibiting in a shortened form the course of a generation through life according to each of the life-tables. They show at each quinquennial age the number surviving out of 100,000 born. A table here follows showing the number, out of 1,000 living at each of several ages, who will live through the next 5 years, according to each life-table. We regret our limit of space precludes us from giving this table, the result of the study of which is as follows:—

“In England and Wales the average chance that a man aged 25 years would survive to age 30 has improved from .953 in 1838-54 to .959 in 1871-80, and to .965 in 1881-90; in the healthy districts of 1849-53 the chance was .961, while in those of 1881-90 it stood at .971; in the old township of Manchester in 1881-90 it was .928.

Again, from another table given in the text of the Report the following conclusions are drawn:—

“The number of births of males that would give 1,000 survivors at 15 years of age in the healthy districts would give 904 survivors at the same age in England and Wales as a whole, and 717 in Manchester township; the number of births of females that would give 1,000 survivors at 15 years of age in the healthy districts would give 915 survivors at the same age in England and Wales as a whole, and 737 in Manchester township. The columns for England and for Manchester township trace the cumulative effect of the *excess of mortality* above the healthy district standard. The figures for England are practically constant between ages 10 and 25 for males, and between ages 15 and 30 for females, indicating that at those ages the effect of the mortality on the number of survivors is practically the same in the country as a whole as it is in the selected districts.”

Dr. Tatham continues:—

“Passing reference has already been made to the columns in the life-table which show the ‘expectation of life,’ but this branch of the subject is important enough to demand more detailed treatment. In the tables given at pp. 213, 214, the expectation of life at each age is given for each of six life-tables. Among males the expectation at birth—in other words, the mean lifetime of all who are born—has ranged from 39.91 years to 43.66 years in England and

Wales within the period from 1838 to 1890 ; in the last ten years of this period it was as low as 28·78 years in Manchester township, while it stood at 51·48 in the selected healthy districts. A pertinent and useful inquiry is, 'At what ages are these years of life lived?' At first sight a contradiction in terms may appear to be involved in asking how many of the 28·78 years average lifetime of males in Manchester township, or of the 43·66 years average lifetime of males in England, or of the 51·48 years average lifetime of males in the healthy districts are lived after the age 65 ; but a moment's reference to a life-table shows that the question is perfectly reasonable. Turning to the healthy district life-table on page clxxxiv., as an example, it is seen that of 509,023 males born 60,648 die during the first year of life, whilst 448,375 are alive at the end of the year ; 14,890 of these die during the second year, whilst 433,485 survive to the end of that year, and so on. The 60,648 males who die in the first year live, on an average, rather more than one-third of a year, or 21,509 years in all ; thus the 'years of life,' lived between birth and 1 year of age, by 509,023 males born, are given by $448,375 + 21,509 = 469,884$. Again, of 323,079 who complete their forty-ninth year, 319,023 live throughout the fiftieth year, while 4,056 die in the course of that year, living on an average about half a year in the interval ; thus the years of life lived between 49 and 50 years of age, by the same 509,023 males born, are given by $319,023 + 2,028 = 321,051$. The sum of these years of life for all ages represents the aggregate years of life lived by 509,023 males from birth to extreme old age ; and the sum of any group of them represents the aggregate years of life lived at the ages indicated by the group. The following table has been constructed to show how the average years of life (denoted in the tables by the terms 'expectation of life at birth,' and 'mean lifetime') are distributed over several life periods in the six tables :—

| Life Period | Age-limits of Period | Length of Period in Years | England and Wales | | | Manchester Township, 1881-90 | Selected Healthy Districts | |
|---------------|----------------------|---------------------------|-------------------|---------|---------|------------------------------|----------------------------|---------|
| | | | 1838-54 | 1871-80 | 1881-90 | | 1849-53 | 1881-90 |
| MALES | | | | | | | | |
| Infancy - | 0-5 | 5 | 3.94 | 4.01 | 4.02 | 3.51 | 4.29 | 4.30 |
| School age - | 5-15 | 10 | 6.92 | 7.11 | 7.35 | 5.95 | 7.88 | 8.13 |
| Adolescence - | 15-25 | 10 | 6.51 | 6.79 | 7.12 | 5.55 | 7.50 | 7.89 |
| Maturity - | 25-35 | 10 | 5.95 | 6.29 | 6.69 | 4.90 | 6.95 | 7.49 |
| | 35-45 | 10 | 5.31 | 5.62 | 6.04 | 3.89 | 6.37 | 6.95 |
| | 45-55 | 10 | 4.54 | 4.76 | 5.16 | 2.71 | 5.72 | 6.25 |
| | 55-65 | 10 | 3.55 | 3.63 | 3.96 | 1.51 | 4.82 | 5.22 |
| Decline - | 65 and upwards | — | 3.19 | 3.14 | 3.32 | 0.76 | 5.03 | 5.25 |
| Total - | All ages | — | 39.91 | 41.35 | 43.66 | 28.78 | 48.56 | 51.48 |
| FEMALES | | | | | | | | |
| Infancy - | 0-5 | 5 | 4.07 | 4.14 | 4.17 | 3.71 | 4.39 | 4.43 |
| School age - | 5-15 | 10 | 7.19 | 7.40 | 7.68 | 6.32 | 8.07 | 8.41 |
| Adolescence - | 15-25 | 10 | 6.73 | 7.07 | 7.44 | 5.92 | 7.61 | 8.12 |
| Maturity - | 25-35 | 10 | 6.12 | 6.58 | 6.99 | 5.35 | 7.00 | 7.69 |
| | 35-45 | 10 | 5.46 | 5.95 | 6.38 | 4.50 | 6.37 | 7.15 |
| | 45-55 | 10 | 4.73 | 5.20 | 5.63 | 3.42 | 5.71 | 6.53 |
| | 55-65 | 10 | 3.82 | 4.21 | 4.55 | 2.16 | 4.89 | 5.60 |
| Decline - | 65 and upwards | — | 3.73 | 4.07 | 4.34 | 1.29 | 5.41 | 6.11 |
| Total - | All ages | — | 41.85 | 44.62 | 47.18 | 32.67 | 49.45 | 54.04 |

"With two unimportant exceptions, the advantage incidental to the healthier periods or localities is shared by each sex at every age-group. On comparison of the three English life-tables with one another, or of the two healthy district tables with each other, the advantage in the healthier periods appears to increase up to, or a little beyond, middle age and then to decrease. On the other hand, in comparing life-tables of different localities but for the same period, the advantage of the healthier localities is found to increase steadily until old age. If the 50 years of age between 15 and 65 be taken to represent the effective or working period of life, the average length of the working period in years, and its proportion to the whole period of 50 years, by the six life-tables, for every child born, will be as follows:—

| | | England and Wales | | | Manchester Township, 1881-90 | Selected Healthy Districts | |
|--|---------|-------------------|---------|---------|---------------------------------|----------------------------|---------|
| | | 1838-54 | 1871-80 | 1881-90 | | 1849-53 | 1881-90 |
| Average lifetime between 15-65 years of age | Males | 25·86 | 27·09 | 28·97 | 18·56 | 31·36 | 33·80 |
| | Females | 26·86 | 29·01 | 30·99 | 21·35 | 31·58 | 35·09 |
| Percentage of the entire age period of 50 years, 15-65 | Males | 52 | 54 | 58 | 37 | 63 | 68 |
| | Females | 54 | 58 | 62 | 43 | 63 | 70 |

"Examination shows that the proportion of the total lifetime which is lived between the ages 25 and 55 differs very little from 40 per cent. in any of the life-tables. For males the proportions in the six life-tables all lie between 39·2 and 40·9, and the average is exactly 40 per cent.; for females the proportions all lie between 38·6 and 40·7, and the average is 39·6 per cent. It follows that in each of these six life-tables about 60 per cent. of the average lifetime is lived partly before 25 years of age, and partly after 55 years of age; and the distribution of this 60 per cent. between the earlier and the later ages would therefore enable us to distinguish between life-tables for healthy and for unhealthy districts or periods without referring to the respective mean lifetimes.

"The designations 'infancy,' 'school age,' 'adolescence,' 'maturity,' 'decline,' 'working period' have been used above as roughly but conveniently representing the several periods of life, and not as having any claims to scientific precision. Obviously

the period of decline must begin earlier in an unhealthy than in a healthy population; but in order to determine how much earlier, it would be necessary to formulate a definition of 'decline,' which should bear some specified relation to figures in the life-table. For example, the expectation of life of males at age 65 by the latest English life-table is 10·31 years, and that of females is 11·26 years. If 'decline' be arbitrarily defined for males as 'the ages at which the expectation of life does not exceed 10·31 years,' and for females as 'the ages at which the expectation of life does not exceed 11·26 years,' then by the three life-tables for 1881-90 decline begins at 65 for each sex in England, at about 57 in Manchester township, and at about 67 in the selected healthy districts. The following table shows the distribution of the mean lifetime on this assumption according to the three life tables for 1881-90 :—

| — | Number of Years Lived | | | Per cent. of Total Lifetime | | |
|----------------------------|-----------------------|---------------------|----------------------------|-----------------------------|---------------------|----------------------------|
| | England and Wales | Manchester Township | Selected Healthy Districts | England and Wales | Manchester Township | Selected Healthy Districts |
| MALES | | | | | | |
| Infancy and school age - | 11·37 | 9·46 | 12·43 | 26·1 | 32·9 | 24·2 |
| Adolescence and maturity - | 28·97 | 17·44 | 34·68 | 66·3 | 60·6 | 67·3 |
| Decline - | 3·32 | 1·88 | 4·37 | 7·6 | 6·5 | 8·5 |
| Total - | 43·66 | 28·78 | 51·48 | 100·0 | 100·0 | 100·0 |
| FEMALES | | | | | | |
| Infancy and school age - | 11·85 | 10·03 | 12·84 | 25·1 | 30·7 | 23·8 |
| Adolescence and maturity - | 30·99 | 19·73 | 36·05 | 65·7 | 60·4 | 66·7 |
| Decline - | 4·34 | 2·91 | 5·15 | 9·2 | 8·9 | 9·5 |
| Total - | 47·18 | 32·67 | 54·04 | 100·0 | 100·0 | 100·0 |

"Reckoned in this way the proportion of 'decline' to total lifetime differs but little in the three life-tables; but the healthier districts have this double advantage: that not only is their average

lifetime longer in itself, but a greater proportion of it belongs to what may be considered the effective working period of life."

In a future article it is our intention to deal with the other matters mentioned in Dr. Tatham's valuable "Letters."

(To be continued.)

SOME RECENT OPHTHALMOLOGICAL PUBLICATIONS.

1. *Nettleship's Diseases of the Eye.* A Manual for Students. Revised and Edited by W. T. HOLMES SPICER, F.R.C.S. Sixth Edition. London: J. & A. Churchill. 8vo. Pp. 465. 1897.
2. *Convergent Strabismus and its Treatment.* An Essay by EDWIN HOLTHOUSE, F.R.C.S. London: J. & A. Churchill. Pp. 177. 1897.
3. *Practical Handbook of the Diseases of the Eye.* By D. CHALMERS WATSON, M.B. With nine coloured Plates and twenty-four Illustrations in the text. Edinburgh: Wm. F. Clay. Cr. 8vo., pocket size. Pp. 248. 1897.
4. *Sight Testing for the G. P.* A Manual by which the General Practitioner can rapidly acquire the knowledge necessary to determine all errors of Refraction, and to prescribe Spectacles. By F. DAVIDSON.
5. *A Practical Guide to the Examination of the Eye, for Students and Junior Practitioners.* By SIMEON SNELL, F.R.C.S. Ed. With eighty-eight Illustrations. Young J. Pentland. 8vo. Pp. 177. 1898.

1. MR. NETTLESHIP'S manual is so well known, and has passed through so many editions, that a review of its contents and style is unnecessary; but we wish to compliment the editor of this edition upon the very satisfactory manner in which he has done his part, and maintained the high character which the previous editions have deservedly gained for this manual.

2. Mr. Holthouse's valuable and interesting essay will repay the reader who wishes to increase his knowledge of the complex conditions which comprise and cause the phenomena of convergent strabismus. It represents an amount of careful

observation and annotation of which its author may well be proud, and should do much to add certainty and accuracy to our conceptions of the phenomena with which it deals.

The essay is divided under six sections—

- I. General Considerations.
- II. The Previous History and its Influence in Monolateral Convergent Strabismus.
- III. The Refraction in Monolateral Convergent Strabismus.
- IV. The Vision in Monolateral Convergent Strabismus.
- V. Alternating Convergent Strabismus.
- VI. The Treatment of Convergent Strabismus.

Each of these subjects he treats in a straightforward and fearless manner, seeking only to establish the facts observed, not to bolster up preconceived ideas or theories.

The points raised and discussed are far too numerous and complicated to be satisfactorily discussed in a short review like this; but we wish to express to Mr. Holthouse our sense of the importance of such work as he has done, and to hope that he or others will continue the observations on the lines which he has adopted.

The book is well printed, and written in good readable style.

3. In his preface Dr. Watson says that he has tried "to give a concise and practical account of the more common diseases of the eye, and the methods employed in their diagnosis and treatment." He considers this book to be "a clinical *vade mecum*, as well as an introduction to the various standard works." He has based the work on the clinical teaching of Dr. Argyll Robertson, to whom also it is dedicated.

The author candidly admits that "in a work of this kind there are, necessarily, many imperfections;" but he has "aimed only at providing a reliable and practical guide to the study of eye diseases."

Of its kind, this is one of the best guides we have seen, but we do not very much like the too condensed form in which the information must necessarily be imparted in all such epitomies. Mental indigestion is sure to be the result in any student who relies solely upon this as a text-book of ophthalmic surgery; and although as a note-book it is an

excellent one, as a text-book it is quite unsuitable to the requirements of the student. It is more against the abuse of such publications as this that we wish to warn the student, for if they read no other work on ophthalmology but Dr. Watson's handbook, it is like living entirely on extract of beef. It may be excellent for certain purposes, but it is not fit to live on alone.

4. Who "F. Davidson" is we have been unable to discover, nor does he boast of any medical or scientific degree by which we can gauge his abilities.

The miserable little book to which he claims authorship bears a very attractive title, but we have failed entirely to find any justification in it for the statement that by its aid "*the G. P. can rapidly acquire the knowledge necessary to determine all errors of refraction.*"

It is entirely without illustration or diagram, its print is small, and its matter not always clearly put. We cannot, in the long list of books on the subject which annually are published, find one from which the G. P. would find greater difficulty in "acquiring the knowledge necessary to determine all errors of refraction." It can only serve the purpose of inducing him to attempt what is, in many cases, the most difficult and critical task which the ophthalmic surgeon has to perform, and may lead him into the gravest of errors—viz., the ordering of incorrect spectacles.

Such a publication as this may make Mr. Davidson's name known amongst general practitioners, but it has no other useful function.

5. This is not a treatise on ophthalmology in general, but, as Mr. Snell in his preface states, his experience with students has taught him that much of the initial difficulty they encounter in the study of ophthalmology depends on the fact that many of the methods employed for examining eye-patients differ so markedly from those they have become familiar with in the practical work of medicine and surgery, that it has been his object to describe the various methods of examination in such a manner and at such length as to be readily understood by the student. Illustrations have been freely introduced as being frequently more explicit than mere verbal description.

The book is well got up, nicely printed, with excellent illustrations (we are, however, rather sorry that the author has allowed his own likeness to appear in two of these). And we can highly recommend it to those for whom the writer intended it—viz., “Students and junior practitioners.”

Injuries and Diseases of the Ear, being Reprints of Papers on Otolology. By MACLEOD YEARSLEY, F.R.C.S. London: The Rebman Publishing Company. 8vo. Pp. 40. 1897.

THE author, in his preface, states that all the papers collected together in this little book have appeared before, but several have been re-written and added to since their first publication. The book consists of six entirely separate monographs on the following subjects:—

- I. On an Artificial Membrana Tympani.
- II. Foreign Bodies in the Ear and their Treatment.
- III. What not to do in Diseases of the Ear.
- IV. The Use of the Pneumatic Aural Speculum.
- V. On the Care of the Ear in Children.
- VI. Aural Reflexes.

These essays are all simply and well written, containing safe and useful information, and if there is not much that is very novel or startling in their contents, there is no advice which we do not heartily endorse.

A Surgical Handbook for the use of Students, Practitioners, House Surgeons, and Dressers. By FRANCIS M. CAIRD, M.B., F.R.C.S. Edin.; and C. W. CATHCART, M.B., F.R.C.S., Eng. and Edin.; Assistant Surgeons, Royal Infirmary, Edinburgh. With very numerous Illustrations. London: Charles Griffin & Company, Ltd. 1897.

THE authors have very carefully revised the whole work in preparing this edition, the eighth. Twenty-eight new diagrams have been introduced, and these, along with much new matter in the text, have caused the addition of forty-three pages to this edition as compared with the last.

The fact that the book after a few years from its introduction has reached its eighth edition, tells that it is

appreciated and has met the wants of the Medical Profession for a concise, clear, and intelligible handbook. We cannot, however, agree with the authors that chloroform is best given from a towel; we consider an Esmarch or Skinner apparatus the better method of administration. With either of them the breathing can be as carefully watched as it could be with the use of a towel, and from our experience the chloroform can be more readily and cautiously administered. We draw attention to this because we think the recommendation of the towel is the only blot in an otherwise excellent article on anæsthetics—one which every student and house surgeon would do well to study carefully.

The chapter on antiseptics makes no mention of formic aldehyde, an antiseptic which we have freely used, and from our experience of the better-known chemicals of this class we can speak of its many advantages. The authors are, however, right in enumerating only antiseptics of which they have had personal experience, as the book is not an exhaustive treatise but simply a text-book.

Emergency cases are treated of in Chapter IX. No mention is made of aspiration of the bladder in retention of urine due to enlarged prostate—a method which saves much time, is easy of performance, and practically painless.

We indicate these few points which, we think, need notice in future editions, for we have little doubt the book will long continue to be a favourite with students and practitioners, as it deserves to be from its many excellencies.

The Tallerman Treatment by Superheated Dry Air in Rheumatism, Gout, Rheumatic Arthritis, Stiff and Painful Joints, Sprains, Sciatica, and other Affections. Case Notes and Medical Reports, with numerous Illustrations. Edited by ARTHUR SHADWELL, M.A., M.B. Oxon., M.R.C.P. London: Baillière, Tindall & Cox. 1898.

THIS book presents in a convenient form full and authoritative information respecting the Tallerman treatment, which, the preface tells us, is still very imperfectly known. That

hot, dry air was a powerful therapeutic agent has long been known, and for ages the Turkish bath was the nearest approach made towards the desired end of using hot, dry air.

Mr. Tallerman some five or six years ago succeeded in producing an apparatus by means of which hot, dry air could be applied to any part of the exterior of the body. A description of the apparatus is given, and its method of application is told in the book.

Good grounds exist for the belief that, properly applied, hot air can affect diseased tissues beneficially, and the related experiences of competent and trustworthy members of the medical profession go to show that as a therapeutic agent the value of hot, dry air has passed from the theoretical to the practical stage.

To the book itself we take exception. Its get up and illustrated cover have more the appearance of a glorified copy of Congreve's Balsamic Elixir volume of testimonials than that of a scientific work. We do not know anything whatever of Mr. Tallerman, but we cannot but condemn his method of appealing to the medical profession in a volume clothed in the garb of the rankest quackery.

His publishers, who occupy an honourable position as medical and scientific publishers, would never have recommended such a binding; it must have been the outcome of Mr. Tallerman's brain; and we regret that Dr. Shadwell should have allowed his name to appear as editor to a work so brought before his professional brethren.

Mastoid Abscesses and their Treatment. By A. BROCA, M.D., Chirurgien des Hôpitaux de Paris, Professeur Agrégé de la Faculté de Médecine, Membre de la Société de Chirurgie; and F. LUBET-BARBON, M.D., Ancien Interne des Hôpitaux de Paris. Translated and edited from the French by HENRY J. CURTIS, B.Sc. and M.D., Lond.; F.R.C.S. With Eleven Coloured Illustrations. London: H. K. Lewis. 1897.

THE present work is a translation from the memoir entitled "Les Suppurations de l'Apophyse Mastoïde et leur traite-

ment," which was published in 1895, after having been awarded the Prix Meynot by the French Academy of Medicine in 1894, to which has been added the substance of a clinical lecture delivered in one of the London hospitals by a friend of the translator.

Of the four chapters of which the volume consists, the first deals with mastoid abscesses, the second with mastoid fistula, the third with chronic suppuration, and the fourth with results. The view adopted by the authors and the translator is that middle-ear affections are secondary infections by pyogenic organisms which inhabit the pharynx, where they grow readily, owing to the presence of lymphoid tissue which shelters them; spreading from this they often infect the middle ear.

In this view they follow the lines long since laid down in Dublin by W. H. Porter, on middle-ear disease following scarlatina—a pamphlet which the distinguished authors may perhaps be excused for not having read; but for M. Broca to adopt the views of M. Ambroise Paré, who described middle-ear inflammations as secondary affections, and looked upon mastoid suppuration when it followed such inflammation as a good sign, in that it was the forming of a complete fistula, and made no mention of the greatest of French surgeons, is incomprehensible.

For the translator there is the excuse that young men now-a-days feel that want of familiarity with the classics of medicine is no discredit.

The Year-Book of Treatment for 1898. A Critical Review for Practitioners of Medicine and Surgery. London, Paris, Melbourne: Cassell & Co., Ltd.

FOR fourteen years this excellent year-book has presented a very readable digest of the progress made during the year in medicine. It has become a familiar and trusted guide to the busy man who wants facts, and has no time to weigh the relative merits of conflicting theories.

Success has attended the venture because all the elements of success were present. No section of medicine was unrepresented, and over each section a competent editor

presided, who arranged, classified, and edited in plain, clear language the practical facts that the busy practitioner requires. And in its pages he reads the experience of his fellow-practitioners, and is not bewildered by the day hallucinations of a German theorist.

Saint Thomas's Hospital Reports. New Series. Edited by DR. HECTOR MACKENZIE and MR. G. A. MAKINS. Vol. XXV. London: J. & A. Churchill. 1897.

WE are always glad to see this annual report, and we read it with both pleasure and profit. But the pleasure is very considerably less and the profit is far from being what it should be owing to the absence of any reference to the choice of anæsthetics. If there is one thing more than another that the subscribers, especially the country ones, and old pupils of this great hospital seek information on it is anæsthetics.

You read surgical reports, you learn all facts that are necessary to know, also as to the antiseptic used—except the very important one of what anæsthetic was used and the reason of the preference. Specialty follows specialty with its report, and yet the anæsthetist is dumb; he of all others has nothing to say—no lesson to teach, no information to give.

The use of anæsthetics has become universal. Every member of the profession of medicine is supposed to know the relative advantages of ether, chloroform, and so forth. He is called upon to administer them, to watch the patient through the danger of anæsthesia, and if he is a conscientious and thoughtful man he subscribes for the Reports of the principal London hospitals, hoping, nay confident, that in them the very important subject of anæsthetics will be fully dealt with. Judge of his astonishment when he finds that this subject, which comes home to each of us—one on which so many lives daily depend—is ignored. It is almost incredible and it is shameful.

Fifty odd years have passed and the anæsthetists of the London hospitals have, to their great disgrace, allowed decade to follow decade and remained dumb on a subject

which called on them to cry aloud. Their talent was buried, and their reward cannot be other than condemnation.

Having freely expressed our disapproval of the absence of an anæsthetic report, we must, in all fairness, congratulate the staff on the up-to-date spirit which created an X-ray department. Of the papers, that on Polyneuritis by Dr. Turney, and Dr. Acland's on Compulsory Vaccination, most commend themselves to our notice.

Indeed, the reports from departments are now so numerous that our reading consists of columns of statistics, and we miss sadly the old-fashioned papers on practical therapeutics. They are shut out by electricity, X-rays, and bacteriology, and, like Charles Lamb, we like "old friends," and are inclined to resent the aggressive youngsters.

Medical and Surgical Reports of the Boston City Hospital.

Eighth Series. Edited by G. B. SHATTUCK, M.D.;
W. T. COUNCILMAN, M.D.; and HERBERT L. BURRELL, M.D.
Boston: Published by the Trustees. 1897.

THE eighth series of the Medical and Surgical Reports of the Boston City Hospital appears as an annual publication. As might be expected, the volume is an up-to-date production, and contains a good and full article on X-rays and their adaptation to medical practice. There is also one on the anatomical and bacteriological study of acute and sub-acute nephritis.

Dr. Leary writes on "An Unusual Pathogenic Action of the Diphtheria Bacilli," which he illustrates with two cases. In the first, diphtheria bacilli appeared in a pustule on the finger of the physician who made an autopsy on a case of diphtheria, the second case is one of typhoid fever with parotiditis, in which bacilli were found in the cultures from the lungs.

We are pleased to know that the good work of the Hospital is appreciated. More sick apply for relief, and subscriptions are so generously bestowed that the authorities found it possible to increase the number of beds last year by one hundred and fifty. The Hospital

now has eight hundred and fifty-six beds, of which three hundred and one are in the contagious wards.

The volume forms a useful addition to medical literature, and is well worth careful study.

Transactions of the Chicago Pathological Society from December, 1895, to April, 1897. Vol. II. Chicago: American Medical Association Press. 1897.

BADLY bound, and printed on glazed bad paper, in small type, this volume at once creates a prejudice against itself. And, as if to intensify this prejudice, there is no table of contents, and the index is printed in diamond or ruby, or some such microscopical type. If the Transactions are intended to be read they should be printed in type sufficiently large to allow of being read without straining the eyesight. Paper cannot be so scarce in Porkopolis as might be reasonably inferred from the small type of the diminutive octavo before us.

And yet, buried in the wretched volume are many excellent papers. We advisedly say buried, for it would require a Teufelsdorch to read it. Of the papers most deserving notice is Dr. Murphy's on fibro-myoma complicating pregnancy, and a paper on intestinal obstruction from an enterolith. Dr. Rie's paper on membranes discharged from the uterus is one of great medico-legal interest. That obscure pathological condition, "Struma Gelatinosa," is the title of a paper by Dr. M. L. Harris.

"Pernicious Malaria, with Relapse," is a carefully prepared and very suggestive paper by Dr. Herrick, in which he draws attention to the occurrence in this disease of convulsions oft repeated, which resemble the *petit mal* of epilepsy.

Dr. Stehman's paper on bovine tuberculosis follows closely on the lines of the Royal Commission appointed a few years since to investigate the subject, and we may add that he is a believer in tuberculin—some beliefs die hard.

Cerebral syphilis is the subject of Dr. Hessert's paper, and, as he well observes, the frequency and importance of syphilis of the nervous system is becoming more and more appreciated

and demands from us more careful observation of its earlier symptoms.

Dr. Preble's paper, "Relative Insufficiency of the Pulmonary Valves," is a deeply interesting study of one of our most obscure pathological conditions.

We have said enough to show that the book is worthy of large print and good paper, but to secure the treasure is like labouring in Klondike—terribly trying.

Deuxième Session de l'Association française d'Urologie, Paris, 1897: Procès-Verbaux, Mémoires et Discussions publiés sous la direction de M. LE DOCTEUR DESNOTS, Secrétaire-General. Avec 65 figures dans le texte. Paris: Octave Doin, Éditeur. 1898.

WE congratulate our French professional brethren on the issue of this their second volume of the Transactions of the Society of Urinology—a society started for "the study of the urinary organs in both sexes."

The opening address was delivered by the President, Professor Guyon, who chose for his subject the Physiology and Pathology of Retention. He divides cases of retention occurring within the pelvis of the kidney, or within its capsule, into the aseptic and the septic, and each of these divisions he subdivides into complete and incomplete. The chemical composition is then reviewed, and in this connection the President considers the toxicity of urine. The address is a good summary of our existing knowledge of renal retention of urine and its results.

All forms of renal retention of urine, septic or aseptic, appear to do well when treated by nephrotomy, and the operation appears to be the treatment which most commends itself to the members of the Society.

Dr. Pousson, of Bordeaux, read a paper on the return of renal calculi after operation, which he illustrated with statistics.

M. Carlier, of Lille, read a paper on "The Operations practised on the Testicle and its Annexes for Hypertrophy of the Prostate," in which all these well-known operations are described in detail, and a historical account of their

introduction is given. M. Carlier also refers to M. Poncet's operation of supra-cystotomy and an artificial urethra; he does not describe the operation or its effects on enlarged prostate, neither does he make any mention of Dr. Hunter McGuire, of Virginia, to whom we are indebted for the operation. Dr. McGuire's account of the operation and the report of his cases appeared in the "Transactions of the American Surgical Association" before M. Poncet, of Lyons, performed or described his operation, which in no particular differs from that of the distinguished Virginian.

The prognostic value of varicocele in tumours of the kidney is the subject of an exhaustive paper by Dr. Leynen, who is inclined to think that the value of the sign is over-rated.

Dr. J. Marichess, of Odessa, contributes a paper on Primary Sarcoma of the Urethra, which interests because of its rarity. Notes on the Development of the Urethra, the Prostate, and the Bladder is an interesting paper for embryologists, but for the general surgeon is not of much practical value.

There are many interesting papers which space does not permit of notice. All the contributions and all the discussions show how carefully our French brethren make up their subject, and how clearly they place their views before the medical profession.

Lexique-Formulaire des Nouveautés Médicales. Par le PROFESSEUR PAUL LEFERT. Paris: J. B. Baillière et Fils. 1898. 18mo. Pp. 336.

EACH day brings with it new discoveries in pathology, as well as in therapeutics. Medical nomenclature is constantly enlarging its borders and developing new terms. It is not easy to keep abreast of the increasing advance in scientific medicine, still less easy to annotate that progress and to remember the host of novel ideas which spring into being. This little volume includes papers, scattered through a considerable number of treatises and medical journals, which the most comprehensive and most modern dictionaries do not contain. To spare the worker researches, which may

be at times protracted and troublesome; to help the practitioner's memory—such is the object of the *Lexique-Formulaire des Nouveautés Médicales*.

In it the reader will find an analysis of the works on, a statement of the most recent discoveries and theories in, General Pathology, Pathological Anatomy, Pathological Physiology, Clinical and Therapeutical Medicine and Surgery; information as to new therapeutical methods, new remedies, and new operations.

The practice, which has been adopted, of giving to diseases the names of the authors who have described them, the numerous designations assigned to one and the same malady by various authors, render medical nomenclature very confusing, and the perusal of works on medicine often difficult. The author has explained all these designations and synonyms.

Under the proper names of the authors the diseases or the symptoms which they have described, the operations or the instruments which they have invented, will be found. Under the names of the diseases the reader will find a rapid review of their chief symptoms and information as to the new therapeutical agents employed against them. Under the names of remedies, their properties and uses, their doses for different ages, and the best method of employing them, together with several formulæ for their exhibition, will be found.

We are confident that the medical public will extend to this *Lexique-Formulaire* the same hearty reception they have accorded to Professor Paul Lefert's other works, and this little volume will find its appropriate place as well on the practitioner's table as in the student's library.

The Winter Meteorology of Egypt, and its Influence on Disease. By H. E. LEIGH CANNEY, M.D. (Lond.); M.R.C.S. (Eng.); F.R. Met. Soc. London: Baillière, Tindall & Cox. 1897. Pp. 72.

DR. H. E. LEIGH CANNEY has published two papers which he read before the Royal Meteorological Society of England in December, 1896, and before the Twelfth International Congress of Medicine at Moscow last year.

The title of the work under our consideration is "The Winter Meteorology of Egypt, and its Influence on Disease." Through the kind assistance of several friends at other stations in Egypt provided with similar instruments, and working on the same method at comparable sites, his own observations were undertaken three years ago, so as to arrive at a knowledge of the climate of Egypt generally, and of the Nile Valley especially, during the winter.

By such combined action very valuable observations have been made, which, as the author observes, afford important information to the medical profession.

In our own personal experience of Egypt in all seasons of the year we have remarked the variations of temperature as being very great, even at Alexandria, at Suez, and other localities. What struck us was the great suddenness of the fall of temperature that occurred on a change of wind.

Dr. Canney shows that the variations of temperature in the Desert range from 23° to 160° Fahrenheit. The facts recorded by him and others, and observed by ourselves at all seasons, afford physicians and their patients indications, which should not be forgotten, as to the necessity of providing against the rapid changes of temperature by suitable clothing; indeed, what is not always attainable abroad—comfortable quarters for invalids—are also *desiderata* that should be looked to by the invalid.

The remarkable dryness of the winter in Egypt in most localities is noted by Dr. Canney. In summer, however, the Egyptian climate is by no means so free from moisture.

The author enumerates many diseases which, he states, are benefited by a sojourn in Egypt. He states as unsuitable the following:—Phthisis, with very acute symptoms or tendency to diarrhœa, or repeated pleurisy, or involved larynx, or active disease of both lungs; advanced emphysema, with weak dilated right side of the heart; fatty heart; angina pectoris; hypertrophy and dilatation of the left side of the heart; aortic regurgitation and aneurysm; advanced endocarditis; dysentery or after-dysentery; chronic diarrhœa; tuberculous kidney.

Dr. Canney's work is well worthy of a place in the study of every physician. The few extracts our space allows

us to give will serve to show the practical nature of the work, which we have no hesitation in commending to our readers.

A Handbook of Midwifery. By W. R. DAKIN, M.D. London: Longmans, Green & Co. 1897. 8vo. Pp. 629.

WE welcome the appearance of an English midwifery laying claim to be more than a mere "students' manual"—a term too often employed as a cloak for inefficiency.

The author states that nothing important to his subject has been omitted, and this claim we think he fairly sustains, with the result that one of the largest works of its kind as yet turned out by a London publisher has appeared.

The letterpress is small but clear, and in this way the volume itself is kept within easily manageable limits. The illustrations too, 400 in number, call for a passing remark; these for the most part are diagrammatical, and drawn by the author as he proceeded with his work. They therefore (as might be expected) fall short of the high standard of accuracy met with in works which rely upon the photographic camera and frozen sections to furnish their illustrations. Nevertheless, there is much to be said in favour of these rough sketches, for they often serve to make clear the text in a manner not so easily attained by perusing more complex drawings.

In dealing with the work proper, we are pleased to note short, clear sections on Development and Physiology, which are in every respect sufficient for the first pages of a midwifery hand-book. Anatomy is barely touched on, and this, too, is as it should be, for all such subjects when dealt with in obstetric works cannot be viewed otherwise than as "padding," and are more profitably studied elsewhere.

The author aims at teaching midwifery as he himself practises it, and is no worshipper of authority; we therefore encounter but few references, which, at all events from an unqualified student's point of view, will not be considered a disadvantage.

It is inevitable, however, that such a plan of procedure must cause differences from time to time as regards treatment, &c., to arise between the author and his readers, and the reviewer accordingly finds himself in sharp disagreement with not a few of the views enunciated. For instance, sedatives are advised in slight cases of accidental hæmorrhage; this to be followed by rupture of the membranes should the bleeding become severe. If the cervix is not open sponge-tents are advised; this latter proceeding is said to make the diagnosis clear between this and unavoidable hæmorrhage, and in either case will be the "best possible treatment."

Now why should sedatives be given in slight accidental hæmorrhage?

Evidently the author imagines that the complication is due to uterine contractions, but this is rarely the case, for it is much more often attributable to the rupture of a diseased blood-vessel. Nor is the flow likely to cease until uterine contractions and retractions obliterate their lumen. Then why discourage these processes by the administration of sedatives? Again, we have better modes of procedure than direct dilatation of the cervix; but, should this be considered necessary, why employ a 'sponge-tent'?—a substance incapable of sterilisation, and prone to tear away the delicate cervical epithelium in consequence of its roughened surface.

Nor is this sponge dilatation either a safe or efficient treatment for placenta prævia centralis as advised by the author.

Again, we read that the indications for forceps fall under three heads—(1) uterine inertia; (2) where the head is abnormally large, the pelvis abnormally small, or in a faulty position; (3) where speedy delivery is necessary—as in placenta prævia, prolapse of cord, eclampsia, and delay in delivery of the after-coming head. Now, according to the teaching of the Dublin School Nos. 1 and 2 would be considered absolute contra-indications to instrumental delivery, and in No. 3 the after-coming head would not be accounted as suitable for forceps.

We likewise object to the author's treatment of eclampsia,

consisting as it does of rapid delivery and the administration of chloroform, and maintain that the most reliable statistics are opposed to it.

These and many other sections of the book do not coincide with our views as to proper obstetric practice, but we nevertheless consider the work worthy of much praise and a distinct addition to the science and art of midwifery, always remembering "that more than one road leads to Rome."

Medical School Calendar for Scotland, 1897-98. Edinburgh :
E. & S. Livingstone, 15 Teviot-place.

FOR students contemplating a trip to Scotland this manual is of the greatest value. In a short, clear, readable statement is told all that the medical student requires to know to enable him to judge of the desirability or otherwise of studying medicine in the Scotch school. Of Irish schools the account given is wholly wrong from beginning to end.

Catechism Series : Surgery. Part V. Edinburgh : E. & S.
Livingstone.

THE Medical Student dearly loves a small book ; it attracts him forcibly, and he is liberally catered for by the publishers. Of this class of booklet is the little work before us, which is modelled on the "Child's Guide," and, like its model, does not convey much information. There are, however, some minds who require easily-digested pabulum ; to these the booklet may be of use.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—Sir GEORGE F. DUFFEY, M.D., President of the Royal
College of Physicians of Ireland.

Sectional Secretary—R. TRAVERS SMITH, M.D.

Friday, December 17, 1897.

The PRESIDENT in the Chair.

A Case of Syphilitic Encephalopathy.

DR. W. R. DAWSON read notes on a case of this disease. [They will be found at page 108.]

THE PRESIDENT said he wished to ask Dr. Dawson if he had seen many nervous cases attributable to syphilis in the earlier stages of the disease.

DR. DRURY said he would like to ask Dr. Dawson if he considered syphilis to be a very common and constant forerunner of general paralysis.

DR. POLLOCK asked Dr. Dawson if he was able to separate the alcoholic from the syphilitic symptoms. He said that he had met with some cases of exaltation which were entirely due to alcoholism, and one which went on to paralysis and ultimately death.

DR. DAWSON, in reply, said he had not seen any nervous cases which were due to the early stages of syphilis. Such cases were very rare, and two forms of mental states occurred, at all events in secondary syphilis. One was an acute mental form, and seemed

to be due to simple syphilitic meningitis. Recovery generally ensued. The second form was a weak melancholic state of mind, probably due to an anæmic condition. In answer to Dr. Drury, he had not the slightest doubt of the importance of syphilis as an ætiological factor of general paralysis. With regard to Dr. Pollock's question regarding the separation of alcoholic and syphilitic symptoms, there were certain symptoms which it would be impossible to say were alcoholic or syphilitic.

Pernicious Anæmia.

DR. J. B. COLEMAN read a note on a case of pernicious anæmia, confining himself chiefly to the clinical aspect of the disease as presented by a man, aged sixty-seven, who was admitted to hospital last June, complaining of weakness and shortness of breath. Patient stated that he had been getting pale and weak for two or three months, during which time he had occasional attacks of diarrhœa and vomiting. On admission to hospital he was extremely anæmic, his skin being of a pale yellow or cream colour; temperature 99° to 101° ; pulse frequent, soft and compressible; he had systolic murmurs over his aortic and pulmonary areas, and a venous hum in the jugular region; he suffered from dyspnœa on exertion. Urine normal in quantity; sp. gr. 1015, dark in colour, acid in reaction, contained neither sugar nor albumen; it gave urobilin spectrum and marked indican reaction; urea 2 per cent.; no trace of iron; ptomains were not examined for. He had subconjunctival ecchymoses, but no retinal hæmorrhages. His blood was pale pink, very watery, did not clot readily; sp. gr. 1034; the fresh specimens showed great variation in the size and shape of the red cells, which had no tendency to rouleaux-formation. Hæmoglobin was reduced to 30 per cent. of normal; the red cells numbered 1,000,000, and subsequently 800,000 per cubic mm. (only 20 to 17 per cent. of normal number); there were only 1,100 white cells per cubic mm., but on the day of his death they amounted to 21,000. Stained blood preparations, which were exhibited, showed poikilocytes, megalocytes (diameter $14\ \mu$.), microcytes (diameter $2-4\ \mu$.), and nucleated red cells; the latter comprised both gigantoblasts (diameter $14-21\ \mu$.) and normoblasts; some red cells had lost their hæmoglobin (shadow corpuscles), and others showed polychromatophilic changes. The patient had some hæmorrhage from his gums, and severe attacks of vomiting and diarrhœa, and he died three weeks after admission to hospital. Regarding treatment, arsenic was tried, but had to be discontinued, gastric sedatives, intestinal antiseptics, rectal injections of water,

oxygen inhalations and nutrient enemata were given. The *post-mortem* examination disclosed no lesion to account for the anæmia; his body was fairly well nourished, subcutaneous fat in considerable quantity; lungs very anæmic; heart fatty with atheroma above aortic valves; absence of blood throughout entire vascular system; spleen small, firm, red; kidneys pale, firm, capsule not adherent; liver fatty; stomach and intestines very pale, with atrophy of their walls.

DR. CRAIG said that in cases of pernicious anæmia tremendous stress had been laid on the proportion of organic to normal sulphates in the urine, not only as a means of diagnosis, but also as a guide to treatment. The amount of organic sulphates diminishes if the case is progressing well.

DR. COLEMAN, in reply, said that from a rapid examination he had concluded the aromatic sulphates to be rather in excess.

PROFESSOR MCWEENEY, DR. FALKINER, and SURGEON-GEN. POTTER all joined in the discussion.

The Section then adjourned.

Friday, January 28, 1898.

The PRESIDENT in the Chair.

Laryngeal Necrosis in Enteric Fever.

SIR GEORGE DUFFEY made a communication on this disease. [It will be found at page 185.]

DR. W. G. SMITH said, with regard to complications in general occurring after enteric fever, they had to deal with the difficult problem whether to regard them as distinct consequences of the typhoid poison or as comparatively accidental events prepared for by the anatomical lesions of typhoid fever, which opens an ingress to other organisms than its own.

DR. E. H. BENNETT said that he had, a considerable time ago, published the case of a man who was seized with laryngeal perichondritis a fortnight after dismissal from hospital, where he had run through a protracted course of typhoid fever. Immediate tracheotomy was necessary to relieve dyspnoea. There was no supuration. The tube could not be afterwards removed, and the patient wore it for fourteen years, when he died of malignant disease. He had the specimen of a second case, in which there was an abscess in the larynx following typhoid, and in the abscess lay two pieces of necrotic cartilage.

DR. J. MAGEE FINNY related a case where laryngeal complications set in a patient about nineteen years of age, a strong, healthy Norwegian. The condition being unrelieved by ordinary treatment, tracheotomy had to be performed by Dr. Taylor. Recovery followed. The tube was removed in seventeen days.

DR. HAYES said it was very curious that the records of laryngeal complications from autopsies and clinical records were so different, the number from autopsies being much in excess. This, he thought, showed that the cause of the complication was very slow and insidious. He believed that in those cases of tracheotomy where the tube could not be removed afterwards the reason was that the lesion occurred on the posterior part of larynx, where all movements in the glottis are carried out, and where, if cicatrization should occur, the motion of the arytenoids would be impeded, and, therefore, stenosis would occur, so that the tube must be retained.

SIR C. NIXON.—If tracheotomy had been performed he thought that the symptoms would have been relieved, and probably the patient's life saved. Von Ziemssen says that laryngeal complications are much lessened by the antipyretic treatment, but he (Sir C. Nixon) had failed to see the truth of this.

MR. HENRY GRAY CROLY said he had performed tracheotomy on a case under Dr. Parsons, but with very little immediate relief to the patient. Extraordinary emphysema occurred in the neck and chest.

DR. G. JAMIESON JOHNSTON had seen Sir G. Duffey's case in consultation. Respiration at that time was bad, but there was plenty of air entering the chest, and no cyanosis. Muscular exertion was necessary to carry out respiration, which, along with the toxin from typhoid, he thought caused death. He would not hesitate to operate again in a similar case. He thought that the lesion was primarily a perichondritis. Had tracheotomy been performed he believed that the tube would have had to be retained, as the necrotic piece of cartilage would almost certainly ulcerate its way out through the mucous membrane at the back and lead to stenosis.

DR. A. R. PARSONS had not seen any laryngeal complications in typhoid fever till three years ago. A patient of his, twenty-two years of age, had a moderately severe attack of typhoid fever, and in convalescence complained of some difficulty in swallowing. On the following evening temperature was 104, and he had severe dyspnoea, accompanied by well-marked laryngeal stridor. Sweating and cyanosis were present. Tracheotomy was immediately

performed, but with little relief, and very soon emphysema occurred, extending down to Poupart's ligament. Death fourteen hours after operation. *Post-mortem* examination showed extensive œdema of epiglottis, enormous swelling of ary-tænoids and ary-epiglottidean folds, with the formation of ulcers over the mucous surfaces. The ulcers were covered with something like a diphtheritic membrane, but more in the nature of a slough, and no pus was present. Microscopic examination showed this whitish material to be swarming with cocci of various kinds. He had seen Sir G. Duffey's case before the consultation, and owing to the man's prostrate condition a satisfactory examination of the larynx could not be made, as the epiglottis was dependent, and could not be raised. The epiglottis itself was somewhat infected. He did not think that the great physical prostration was to any material extent dependent on the dyspnœa. He did not think that the patient would have lived had tracheotomy been performed. Such cases he thought more likely to be cases of secondary infection by staphylococci and streptococci on account of the impaired vitality of the tissues.

SIR GEORGE DUFFEY, replying, said it seemed to him that there were two classes of cases in which tracheotomy was necessary—one in which the complication occurs comparatively early, and the other class, like Dr. Bennett's patient and Trousseau's cases, in which the complication occurs after convalescence. Trousseau says that if the operation is to be done at all it should be done *plus tôt que plus tard*. Statistics showed that a very fair number of such cases recovered after tracheotomy. The great difficulty was to keep the larynx open after the operation. He thought that this patient's death was due to great muscular exhaustion and fatigue. He agreed with Dr. Parsons that the case was one of perichondritis, and it has been proved that the disease may occur as such without any ulceration whatever.

Acute Goître Successfully Treated by Thyroid Extract.

DR. RICHARD A. HAYES read notes of a case on the above subject. (Patient exhibited.)

CASE.—A. S., aged twenty-two, applied at Throat Department, National Eye and Ear Infirmary, 14th Oct., 1897. He presented a soft goître involving both lobes and isthmus, which he stated was of three weeks' duration only. His neck measured $18\frac{1}{4}$ inches over tumour; pulse, 84, and quiet. A loud systolic bruit and venous murmur were heard over the tumour; there was marked dyspnœa, with loud inspiratory stridor on the least exertion or excitement,

but the arytenoids moved outwards normally during quiet inspirations, but in a jerky manner. There was no exophthalmos, and the heart sounds were normal.

The patient was ordered K. I. gr. 10, tr. strophanthi m 10, ter die. After a week the tumour was almost unaltered, but the pulse-rate had gone up to 96. Five-grain tabloids of thyroid extract (B. & W.) twice daily were then ordered, and at the end of a week the dyspnœa and stridor had completely disappeared, and the systolic bruit and venous hum could no longer be heard. The tumour had also somewhat decreased in size. The treatment was continued, and on December 16th, or two months after the case was first seen, the goitre had almost quite gone, a slight enlargement of the left lobe alone remaining, the neck measuring 16 inches.

This case probably belonged to the exophthalmic variety of goitre, and on looking over the *British Medical Journal* and *Lancet* for the past eighteen months I find five cases reported as successfully treated by thyroid extract, all being exophthalmic. I have, however, at present under my care a marked case of this kind with extremely rapid pulse and much general prostration, in which not only did the thyroid extract give no relief, but I was obliged to discontinue it on account of unpleasant effects on the patient.

In forms of goitre other than exophthalmic I have found the results of treatment by thyroid extract very unsatisfactory, but several cases have been reported as cured and improved. In the *British Medical Journal*, January, 1897, a case of "simple" goitre of nine months' standing is reported as cured in three months. In the *British Medical Journal*, "Epitome," 21st March, 1896, K. P. Serapin reports good results, but gives no details, and in the *British Medical Journal*, "Epitome," 7th December, 1895, Marie (*Sem. Méd.*, November 13th) reports a successful case of five years' standing. He also quotes Sené and Bruns in "simple" goitre, Bruns having in 60 cases 14 cures, 20 marked improvements, and 9 decided improvements. No details being given of these cases, it is possible that many of them may have been of the exophthalmic variety with goitre only.

SIR C. NIXON said he had seen cases of myxœdema with complete atrophy of the gland treated with thyroid extract with extraordinary results. He understood that the administration of thyroid extract in exophthalmic goitre made the symptoms worse. This was easily understood, as the giving of thyroid extract increased the amount of secretion already in excess. How was it explained that the action of thyroid extract was remediable in two opposite conditions?

SURGEON-GENERAL POTTER said that he had seen many cases of

simple goitre when in India. The goitres, although extremely large, did not cause the slightest trouble to the person. The swelling in the neck generally went away after one application of biniodide of mercury.

DR. A. R. PARSONS said that the case was interesting, inasmuch as the enlargement of the thyroid seemed to have occurred without any definite cause, and in the absence of knowledge was it not possible that the whole thing should have subsided without thyroid extract as rapidly as it had come on.

The PRESIDENT said that perhaps some of the cases to which Sir C. Nixon had referred, and also Surgeon-General Potter's cases, were not similar to Dr. Hayes's. He took it that Surgeon-General Potter's cases were endemic, common in Switzerland and in some parts of England where the so-called Derbyshire neck existed. He saw a number of cases in the north of England similar more or less to the Swiss cases—namely, cretons—which Dr. Murray found were much benefited by thyroid extract.

DRS. CROLY and KNOTT also spoke.

DR. R. A. HAYES, in reply, said that their use of thyroid extract must be, to a certain extent, empirical. It would be a happy thing if they could adopt Sir C. Nixon's simple theory to explain cases of exophthalmic goitre. How would he (Sir C. Nixon) explain those cases frequently met with of exophthalmic goitre with cardiac symptoms excessively marked, and no goitre at all present. He believed that Surgeon-General Potter's cases were of the endemic type, and he could himself bear out that, in certain classes of cases, good results were obtained from the application of biniodide of mercury, with arsenic internally. He was inclined to agree with Dr. Parsons, because he had seen cases of exophthalmic goitre get well of themselves, and rapidly; but in a case like the present, where the patient was suffering from dyspnoea and nervous symptoms, he thought it only right to try and alleviate his trouble in whatever way seemed best.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.

Sectional Secretary—E. J. McWEENEY, M.D.

Friday, January 14, 1898.

The PRESIDENT in the Chair.

Aneurysm of Heart.

DRS. NORMAN and RAMBAUT demonstrated this specimen, which was discussed by DRS. McWEENEY and CROLY, and DR. NORMAN replied.

Cirrhotic Liver with Adenomatous Tumour.

DR. H. T. BEWLEY showed this specimen, which was discussed by DRS. NORMAN, the PRESIDENT, McWEENEY, and CROLY, and DR. BEWLEY replied.

Dissecting Aneurysm of Aorta.

A specimen illustrative of this condition was shown by DRS. NORMAN and REDINGTON, and discussed by the PRESIDENT OF THE ACADEMY (Professor Bennett), DRS. CROLY, KNOTT, and the PRESIDENT OF THE SECTION.

Intra-Ocular Sarcoma.

MR. A. H. BENSON described two cases, of which the following are abstracts :—

CASE I.—E. M., a girl, aged twenty-two. Extensive detachment of retina. High tension. Total blindness. Enucleation of globe. Diffuse, flat, pigmented tumour from ciliary body to near the equator, almost crescentic on section. Spindle-celled melanoma. No recurrence after 13 months.

CASE II.—K. F., a woman, aged fifty-two. Funnel-shaped detached retina, with intra-ocular hæmorrhages visible. High tension. Vision totally lost. Pain intense. Enucleation. Punctuated pale tumour, about the size of a good pea, growing near optic nerve. No recurrence after a year and ten months. The tumour was a leuco-sarcoma, entirely devoid of pigmentation.

MR. CROLY wished to know was it in the brain or in the other eye

that recurrence took place after removal of the contents of the orbit for sarcomatous tumour. Sarcomatous tumours were not likely to recur in their original positions, and sarcomatous tumours spread through the blood-vessels, not the lymphatics. It was his experience to find sarcomatous tumours in the young, and he had seen sarcoma of the tonsil at seventeen years of age.

MR. BENSON, replying, said that in talking of recurrence he alluded to local recurrence. Of course in eye cases general recurrence occurred also, and that came into Fuchs's fourth stage generalisation. Intra-ocular sarcomata recurred in young people, but very much more commonly in older people. If, in removing the eye, the optic nerve was found implicated, as much of the latter as possible was also removed; but extirpation of the orbit was an impossible thing to do completely, and some of the diseased tissue was liable to get introduced into some of the crevices in the neighbourhood.

SECTION OF SURGERY.

President—SIR WILLIAM THOMSON, President of the Royal College of Surgeons.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, January 21, 1898.

The PRESIDENT in the Chair.

A Case of Successful Ligation of Left Subclavian Artery in its second stage.

MR. HENRY GRAY CROLY detailed the history of a case of traumatic aneurysm which involved the third stage of the left subclavian, and the third stage of the axillary arteries. Mr. Croly ligatured the subclavian in its second stage. The patient, who was exhibited to the Society in January, 1897, and again on this date, a year after operation, is in perfect health, and can use his left arm as well as his right. He is at work daily as a garden labourer.

History.—He was stabbed by a man, in a public-house, with a tailor's scissors. The first stab was inflicted immediately below the clavicle, the second above the clavicle; very severe arterial

hæmorrhage followed. The man's arm dropped dead at his side, he became collapsed, and was removed at once by the police to the hospital. On admission the hæmorrhage was merely oozing; there was a huge hæmatoma beneath the clavicle, and the man was in a very weak state. No radial pulse could be felt; a *bruit* was heard over the tumour. Restorative treatment was adopted; pressure applied; under treatment, which included perfect rest, the tumour gradually diminished, and the pulsation became less forcible. In Nov., 1893 (six months after the injuries were inflicted), the patient left hospital for the Convalescent Home at Stillorgan, and shortly returned home and resumed his work. A large aneurysmal tumour soon formed, and the man was re-admitted to the hospital, February 15th, 1895. (The cast exhibited shows the extent of the tumour at that time.) The patient was placed under treatment again, and perfect rest was enjoined.

December 2nd, 1895, Mr. Croly, assisted by his colleagues, ligated the subclavian artery in its second stage. An incision, about two inches in length, was made along the outer border of the sterno-mastoid; a second incision extended above the clavicle from the sterno-clavicular articulation to the acromion process, the sternal and clavicular origins of the sterno-mastoid muscle were divided, the aneurysmal tumour was found to occupy the entire third stage of the subclavian, the omohyoid muscle was pushed up, the dissection was continued, and the external border of the scalenus anticus muscle was found with its external border directed backwards. The phrenic nerve came into view in its normal position, and on its exposure the patient hiccupped twice. The outer half of the scalenus anticus muscle was divided with a scissors rounded on its points. The artery which lay in the bottom of a very deep wound and covered by a strong fascia was exposed and pulsated, and portion of its sheath carefully divided. At this stage of the operation the pleura, like the finger of a white glove, hopped up, but gave no further trouble. With the left hand a deeply curved aneurysm needle was passed under the artery from below, and then armed with a *double* ligature of gold-beater's skin. The ligature next the heart was first tightened with a "reef-knot;" the pulsation in the aneurysm ceased immediately, and the radial pulse could not be felt. The second ligature was then tightened, and the four ends were next secured across the vessel by means of the "stay knot." The ends of the ligature were cut off, and the wound closed. Every step of the operation was carried out strictly in accordance with aseptic rules. The incisions were closed by means of gut sutures, and the arm and shoulder

enveloped in cotton wool and flannel bandages. The patient made an uninterrupted recovery, and was exhibited to the members at the Surgical Section of the Academy in January, 1896. His arm, forearm, and hand are now normal; he works and lifts weights.

The PRESIDENT remarked that the actual mode of applying the ligature was important, the walls of the vessels not being injured, but only approximated, allowing the irritation to produce entire occlusion and adhesion of the walls.

SIR WILLIAM STOKES said that the best congratulations were due to Mr. Croly. The result showed that a clot formed at the situation of the ligature—a thing which some authorities say is impossible. In the operation it was of great importance not to wound the phrenic nerve. He asked Mr. Croly if it were necessary in cases like his to divide any portion of the scalenus anticus muscle in order to take out the vessel in its second stage. He (Sir W. Stokes) had performed the operation several times on the dead body, and found that by drawing to the inside the scalenus anticus, and without any division of the muscular tissue, he could get at the second stage very well, and thought that by this means the phrenic nerve could be avoided. He thought that Mr. Croly's method of passing the aneurysm needle from below upwards and outwards was the best, as, by so doing, the subclavian vein ran least risk of being injured. Some text-books say that the needle should be passed in the opposite direction—from without inwards—in order to avoid including the last cord of the brachial plexus; but he considered the subclavian vein a much more important structure, and that the nerve could be avoided.

MR. T. E. GORDON considered that the method of applying the ligature was among the most important factors which gave the brilliant result. He thought that it made little difference what the ligature was made of provided it was perfectly sterile; silk was excluded. He had been practically satisfied with the use of catgut boiled in superheated alcohol, a method which did not render the catgut brittle. He had found kangaroo tendon very brittle. He would like to ask Mr. Croly in what way the wounding of the pleura was of such special danger. He was inclined to think that a large number of the fatal cases that have occurred from wounding the pleura were due to want of aseptic precaution.

The SECRETARY also spoke.

MR. M'CAUSLAND asked if the scalenus muscle were drawn aside, and if the phrenic nerve were in the position already referred to, would any result follow the traction on the nerve?

DR. KNOTT made a few remarks.

MR. CROLY, in reply, said he had always been keen on approximating the coats of an artery by Scarpa's method. There was no case on record of secondary hæmorrhage from any artery in its continuity where Scarpa's method had been adopted. With regard to Sir William Stokes's remarks, he could only say that to have exposed the second stage of the artery without cutting the muscle would have been an utter impossibility. The scalenus anticus could be drawn over in the dead subject. He always attempted to pass the aneurysm needle unarmed. He agreed with Mr. Gordon in his remarks about the ligature.

Litholapaxy.

SURGEON-MAJOR BAKER brought forward a report on a series of 404 operations performed by him when acting as civil surgeon in Hyderabad during the period from 1st February, 1896, to 21st January, 1897, together with fourteen lithotomies performed for various reasons during the same time, and exhibited the calculi removed during these operations. The paper, which was one of exceptional interest, will be published in full in the Transactions.

THE PRESIDENT said that they might congratulate themselves on the fact that the work in this particular operation of stone done in India had been mainly done by Irishmen.

MR. CROLY said that the cause of stone was not known. It had been attributed in Scotland to the porridge. Alluding to recurrence he said that he had taken two stones out of a man's bladder, and took two more in another couple of years from the same man. He had operated on a good many children for stone, and had found that he could get a No. 7 staff into the bladder without any dilatation of the urethra. There were in the museum stones which he thought Surgeon-Major Baker would not be able to crush owing to their hardness. Some books denied that a stone got attached to the coat of the bladder, but he had once to scoop out a stone which was adherent on all sides of the bladder. He asked why the crushing was complicated with the cutting operation. If a cutting operation was going to be done, why not cut out the stone and drain the bladder? Draining of the bladder was now considered a most important point.

BRIGADE-SURGEON-LIEUTENANT-COLONEL POTTER said that he had been a stone-cutter and not a stone-crusher. When in India he had seen four operations for stone in one morning, but never more. He considered litholapaxy to be infinitely superior to lithotomy. He thought that the water of the country had a good

deal to do with the frequency of stone, and possibly heredity might also have something to do with it.

SURGEON-MAJOR BAKER, replying, said that to Keegan was due the credit of having proved, against a good deal of prejudice, that crushing of stone in children could be carried out satisfactorily. Mr. Freyer had precisely the same proportion of recoveries in his work in London, including adults and children, as he had in India. Weiss's instrument for children was No. 5 in the shank and No. 7 in the bend. His difficulty on hearing of Mr. Keith's operation first had been exactly the same as Mr. Croly's, and he had thought that crushing combined with cutting was wrong. First of all a grooved staff is passed, the urethra opened with a tenotome, a grooved director passed in, then a small female sound, and, finally, a large one, and a small lithotrite is then easily passed into the bladder. He did not believe that the wound existed for more than an hour after the operation. A single drop of urine never came away afterwards, a fact which he could not explain. Keith gave as an explanation that the opening was valvular. The operation was entirely different from perineal lithotomy, which consisted in making a large wound in the perineum and introducing something like a pair of calipers. He had no doubt that Mr. Croly had met with stones which would defy any lithotrite. He was sure that stones sometimes became adherent to the bladder.

The Section then adjourned.

ARMY MEDICAL STAFF.

THE following is the official list of successful candidates for commissions in the Army Medical Staff at the examination held in London in February, 1898:—

| Order of Merit | Names | Marks | Order of Merit | Names | Marks |
|-------------------|---------------------|-------|-------------------|---------------------|-------|
| 1. | Nickerson, W. H. S. | 2,775 | 12. | Dobbin, E. J. | 2,154 |
| 2. | Walker, A. E. | 2,693 | 13. | O'Flahertie, A. R. | 2,148 |
| 3. | Nickerson, G. S. | 2,617 | 14. | Herrick, H. | 2,127 |
| 4. | Weld, A. E. | 2,504 | 15. | Mainprise, C. W. | 2,103 |
| 5. | Gallie, J. S. | 2,474 | 16. | Archer, G. J. S. | 2,069 |
| 6. | Crisp, G. B. | 2,439 | 17. | Fuhr, R. J. H. | 2,066 |
| 7. | Walton, H. B. G. | 2,324 | 18. | Hall, J. O. | 2,058 |
| 8. | Jagger, W. | 2,323 | 19. | Heffernan, F. J. C. | 1,994 |
| 9. | MacCarthy, A. B. | 2,275 | 20. | Cowan, J. | 1,965 |
| 10. | Selby, R. | 2,196 | 21. | Hewitt, E. P. | 1,943 |
| 11. | Thorpe, A. E. | 2,163 | | | |

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ;

F.R.C.P.I. ; F. R. Met. Soc. ;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four weeks ending Saturday, January 29, 1898.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

| Towns | Weeks ending | | | | Towns | Weeks ending | | | |
|---------------|--------------|---------|---------|---------|-------------|--------------|---------|---------|---------|
| | Jan. 8 | Jan. 15 | Jan. 22 | Jan. 29 | | Jan. 8 | Jan. 15 | Jan. 22 | Jan. 29 |
| Armagh - | 28.5 | 14.3 | 21.4 | 14.3 | Lisburn - | 21.3 | 29.8 | 4.3 | 21.3 |
| Ballymena | 28.2 | 33.8 | 50.7 | 11.3 | Londonderry | 25.1 | 26.7 | 26.7 | 31.4 |
| Belfast - | 24.5 | 23.6 | 25.2 | 24.3 | Lurgan - | 41.1 | 4.6 | 13.7 | 9.1 |
| Carrickfergus | 35.1 | 29.2 | 35.1 | 17.5 | Newry - | 36.2 | 28.2 | 16.1 | 8.1 |
| Clonmel - | 19.5 | 29.2 | 48.7 | 24.3 | Newtownards | 22.7 | 22.7 | 34.0 | 5.7 |
| Cork - | 26.3 | 21.5 | 18.0 | 22.1 | Portadown | 24.7 | 43.3 | 37.1 | 43.3 |
| Drogheda - | 30.4 | 3.8 | 0.0 | 15.2 | Queenstown | 11.5 | 17.2 | 23.0 | 23.0 |
| Dublin - | 29.7 | 31.2 | 31.3 | 28.2 | Sligo - | 25.4 | 30.5 | 15.2 | 30.5 |
| Dundalk - | 16.8 | 0.0 | 37.7 | 8.4 | Tralee - | 22.4 | 22.4 | 11.2 | 28.0 |
| Galway - | 11.3 | 34.0 | 7.6 | 30.2 | Waterford | 15.9 | 23.9 | 6.0 | 29.8 |
| Kilkenny - | 9.4 | 4.7 | 23.6 | 23.6 | Wexford - | 13.5 | 9.0 | 22.6 | 40.6 |
| Limerick - | 18.2 | 22.5 | 21.1 | 28.1 | | | | | |

In the week ending Saturday January 8, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 23.0), was equal to an average annual death-rate of 21.4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24.3 per 1,000. In Glasgow the rate was also 24.3. In Edinburgh it was 25.0.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 25·8 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in eleven of the districts to 10·2 in Sligo—the 5 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 143 deaths from all causes registered in Belfast are 1 from measles, 2 from whooping-cough, 1 from diphtheria, 6 from enteric fever, and 3 from diarrhoea. The 16 deaths in Londonderry comprise 4 from whooping-cough.

In the Dublin Registration District the registered births amounted to 235—110 boys and 125 girls; and the registered deaths to 208—88 males and 120 females.

The deaths, which are 12 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·0 in every 1,000 of the population, being 1·7 under the mean rate for the first week of the ten years 1888–1897. Omitting the deaths (numbering 9), of persons admitted into public institutions from localities outside the district, the rate was 29·7 per 1,000.

Twenty-nine deaths from zymotic diseases were registered, being 4 over the average for the corresponding week of the last ten years, and 9 over the number for the previous week. They comprise 5 from scarlet fever (scarlatina), 5 from influenza and its complications, 4 from whooping-cough, 6 from enteric fever, and 3 from diarrhoea.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 25 in the week ended December 18 to 30 in the following week, and 37 in the week ended January 1, further rose to 43. Thirty-four scarlatina patients were discharged, 3 died, and 185 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week. This number does not include 31 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of cases of enteric fever admitted to hospital was 18, being 4 under the admissions in the preceding week. Twenty-three patients were discharged, 2 died, and 128 remained under treatment on Saturday, being 7 under the number in hospital on that day week.

The hospital admissions for the week included, also, 3 cases of

typhus. Five cases of this disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 51, being 9 under the average for the corresponding week of the last ten years, and 3 under the number for the previous week. The 51 deaths comprise 31 from bronchitis and 17 from pneumonia.

In the week ended Saturday, January 15, the mortality in thirty-three large English towns, including London (in which the rate was 22·9), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·4 per 1,000. In Glasgow the rate was 21·2, and in Edinburgh it was 19·3.

The average annual death-rate in the twenty-three principal town districts of Ireland was 25·6 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in fifteen of the districts to 7·6 in Galway—the 9 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from simple continued fever. Among the 138 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 1 from whooping-cough, 10 from enteric fever, and 1 from diarrhoea. The 17 deaths in Londonderry comprise 1 from whooping-cough and 1 from diarrhoea.

In the Dublin Registration District, the registered births amounted to 202—90 boys and 112 girls; and the registered deaths to 213—91 males and 122 females.

The deaths, which are 31 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·8 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 31·2 per 1,000. During the first two weeks of the current year the death-rate averaged 31·4, but was 3·1 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 22, being 9 below the average for the corresponding week of the last ten years, and 7 under the number for the previous week. The 22 deaths comprise 3 from scarlet fever (scarlatina), 9 from influenza and its complications, 2 from whooping-cough, 4 from diphtheria, 2 from enteric fever, and one from diarrhoea.

The weekly number of cases of scarlatina admitted to hospital fell to 37. Thirty-three scarlet fever patients were discharged; one died, and 188 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week. This number is exclusive of 21 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 16, being 2 under the admissions in the preceding week and 6 under the number in the week ended January 1. Twenty patients were discharged, 3 died, and 121 remained under treatment on Saturday, being 7 under the number in hospital on that day week.

Four cases of typhus were received. Two patients were discharged, and 7 remained under treatment on Saturday.

The number of deaths from diseases of the respiratory system registered is 54, being 17 under the average for the second week of the last ten years. The 54 deaths comprise 28 from bronchitis and 24 from pneumonia.

In the week ending Saturday, January 22, the mortality in thirty-three large English towns, including London (in which the rate was 23·4), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 18·4, and in Edinburgh it was 16·0.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 25·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in fourteen of the districts to 9·4 in Londonderry—the 17 deaths from all causes registered in that district comprising 6 from whooping-cough. Among the 147 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 1 from whooping-cough, 1 from diphtheria, 10 from enteric fever, and 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 171—95 boys and 76 girls; and the registered deaths to 221—110 males and 111 females.

The deaths, which are 30 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 33·0 in every 1,000 of the population. Omitting the deaths (numbering 11) of persons admitted into public insti-

tutions from localities outside the district, the rate was 31·3 per 1,000. During the first three weeks of the current year the death-rate averaged 31·9, and was 3·5 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 31, being 9 over the number for the preceding week, but one below the average for the corresponding week of the last ten years. The 31 deaths consist of 2 from scarlet fever (*scarlatina*), 9 from influenza and its complications, 2 from whooping-cough, 6 from diphtheria, 1 from ill-defined fever, 7 from enteric fever, 2 from diarrhoea, 1 from dysentery, and 1 from erysipelas.

The number of cases of *scarlatina* admitted to hospital was 30, being 7 under the admissions in the preceding week. Twenty-five *scarlatina* patients were discharged, 3 died, and 190 remained under treatment on Saturday, being 2 over the number in hospital on that day week. There were also 25 convalescents from *scarlatina* at Beneavin, Glasnevin.

Nineteen cases of enteric fever were admitted to hospital. Twenty-one patients were discharged, 3 died and 116 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had risen from 51 in the week ended January 8, to 54 in the following week, fell to 36, or 39 under the average for the corresponding week of the last ten years. The 36 deaths consist of 25 from bronchitis and 11 from pneumonia.

In the week ending Saturday, January 29, the mortality in thirty-three large English towns, including London (in which the rate was 20·4), was equal to an average annual death-rate of 18·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·4 per 1,000. In Glasgow the rate was 18·0, and in Edinburgh it was 15·8.

The average annual death-rate in the twenty-three principal town districts of Ireland was 25·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in seventeen of the districts to 6·2 in Portadown—the 7 deaths from all causes registered in that district comprising 1 from enteric fever. Among the 142 deaths from all causes registered in Belfast are 1 from measles, 1 from whooping-cough, 1 from diphtheria, 11 from enteric fever, and 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 240—124 boys and 116 girls; and the registered deaths to 194—83 males and 111 females.

The deaths, which are 39 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·9 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 28·2 per 1,000. During the first four weeks of the current year the death-rate averaged 31·2, and was 4·0 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 29, being 2 under the average for the corresponding week of the last ten years, and also 2 under the number for the previous week. The 29 deaths consist of 3 from scarlet fever (scarlatina), 10 from influenza and its complications, 4 from whooping-cough, 1 from diphtheria, 2 from simple continued and ill-defined fever, 6 from enteric fever, 1 from diarrhœa, and 2 from erysipelas.

Thirty cases of scarlatina were admitted to hospital. This number shows a decline of 7 as compared with the admissions in the week ended January 15. Thirty-seven scarlatina patients were discharged, 3 died, and 180 remained under treatment on Saturday, being 10 under the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Beneavin, Glasnevin.

Twenty-six cases of enteric fever were admitted to hospital. Twelve patients were discharged, 2 died, and 128 remained under treatment on Saturday, being 12 over the number in hospital on the preceding Saturday.

The number of deaths from diseases of the respiratory system registered is 43, being 7 over the number for the preceding week, but 22 under the average for the fourth week of the last ten years. The 43 deaths comprise 26 from bronchitis and 15 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of January, 1898.

| | | | |
|---|---|---|----------------|
| Mean Height of Barometer, - | - | - | 30·202 inches. |
| Maximal Height of Barometer (on 23rd, 9 a.m.), | | | 30·589 „ |
| Minimal Height of Barometer (on 1st, 9 a.m.), | | | 29·334 „ |
| Mean Dry-bulb Temperature, | - | - | 47·4° |
| Mean Wet-bulb Temperature, | - | - | 45·2°. |
| Mean Dew-point Temperature, | - | - | 42·8°. |
| Mean Elastic Force (Tension) of Aqueous Vapour, | | | ·276 inch. |
| Mean Humidity, - | - | - | 85·1 per cent. |
| Highest Temperature in Shade (on 30th), | - | | 60·8°. |
| Lowest Temperature in Shade (on 1st), | - | | 31·9°. |
| Lowest Temperature on Grass (Radiation) (on 1st), | - | - | 30·0°. |
| Mean Amount of Cloud, - | - | - | 65·8 per cent. |
| Rainfall (on 14 days), - | - | - | 1·786 inches. |
| Greatest Daily Rainfall (on 2nd), - | - | - | ·498 inch. |
| General Directions of Wind, | - | - | S. W., W., S. |

Remarks.

January, 1898, establishes a record for high temperature—the mean was above the average all over North-western and Western Europe, including France and Northern Germany. In Dublin it was 47·8°, or 1·2° above the value for the warm January of 1875. An anticyclone over Central Europe, with depressions over the Norwegian Sea and Northern Europe, caused S.W. winds off the Atlantic and the high temperature of the month. There was at the same time a deficient rainfall, which is unusual.

In Dublin the arithmetical mean temperature (47·8°) was much above the average (41·4°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 47·4°—a record warmth for January. In the thirty-three years ending with 1897, January was coldest in 1881 (M.T.=33·2°), and warmest in 1875 (M. T.=46·6°). In 1897, the M. T. was 38·1°. As a general rule, January in Dublin is not colder, but a shade warmer, than December. This is owing to the full development in January of a winter area of low pressure over the Atlantic, to the north-westward of the British Isles, and to a resulting prevalence of S.W. winds in their vicinity. January, 1898, proved no exception to this rule, the M. T. being 2·9° above that of December, 1897 (44·9°).

The mean height of the barometer was 30·202 inches, or 0·328 inch above the corrected average value for January—namely,

29·874 inches. The mercury rose to 30·589 inches at 9 a.m. of the 23rd, and fell to 29·334 inches at 9 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, 1·255 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $47\cdot4^{\circ}$, or $10\cdot1^{\circ}$ above the value for January, 1897. Using the formula, $\text{Mean Temp.} = \text{Min.} + (\text{max.} - \text{min.} \times .52)$, the M.T. becomes $47\cdot9^{\circ}$, compared with a twenty-five years' average of $41\cdot5^{\circ}$. The arithmetical mean of the maximal and minimal readings was $47\cdot8^{\circ}$, compared with a twenty-five years' average of $41\cdot4^{\circ}$. On the 30th the thermometer in the screen rose to $60\cdot8^{\circ}$ —wind, S.W.; on the 1st the temperature fell to $31\cdot9^{\circ}$ —wind, W. The minimum on the grass was $30\cdot0^{\circ}$, also on the 1st.

The rainfall was 1·786 inches, distributed over 14 days. The average rainfall for January in the twenty-five years, 1865–89, inclusive, was 2·200 inches, and the average number of rainy days was 17·3. The rainfall, therefore, and also the rainy days were below the average. The record rainfall for January was in 1895—namely, 5·711 inches on 24 days. In 1876, only ·406 inch was measured on but 9 days; and in 1880 the rainfall was only ·563 inch on but 8 days. In 1897, 2·694 inches fell on 17 days.

The atmosphere was foggy on the 1st, 2nd, 3rd, 5th, 13th, 14th, 15th, and 20th. High winds were noted on 8 days, reaching the force of a gale on 4 days—the 18th, 19th, 29th, and 30th. There was no snow, sleet, or hail. Temperature exceeded 50° in the screen on 21 days; while it fell to or below 32° in the screen on only one night, compared with 13 nights in 1897, only 3 in 1896, 18 in 1895, 7 in 1894, 4 in 1893, 15 in 1892, 7 in 1891, 1 night in 1890, and 3 nights in 1889. The minima on the grass were 32° or less on only 3 nights, compared with 21 nights in 1897, 8 nights in 1896, 29 in 1895, 17 in 1894, 16 in 1893, 25 in 1892, 21 in 1891, 15 in 1890, and 16 in 1889. Solar halos were seen on the 1st and 2nd; lunar halos on the 1st, 3rd, 9th, and 31st.

New Year's Day, 1898, broke calm, foggy, and frosty. A solar halo was seen at 1 p.m. Dense, wet fog formed at 4 p.m. During the week ended Saturday, the 8th, there was a spell of open, but rainy and generally changeable, weather. The prevalent trend of the atmospheric currents across North-western Europe was from S.W. to N.W., but no very large or deep depressions were observed, and so there were no gales of any magnitude. Even on the Continent there was but little frost, and what did occur was intermittent only. In the South of Russia and in Hungary, however, freezing weather of some intensity was reported within the limits of an anticyclone which had held its position over those regions with considerable

steadiness since December 27. On Sunday a shallow depression off the S. of Ireland caused a heavy rainfall in this country and in Wales. On Monday evening a dense wet fog hung over Dublin for a time. A red sunrise on Tuesday morning ushered in a new depression, which brought a still heavier downpour to the Irish and Welsh stations. By Wednesday morning the area of precipitation had extended to England. A brief spell of finer and very warm weather was followed by a renewed rainfall on Thursday afternoon. Friday was at first brilliant, then cloudy. A partial eclipse of the moon was seen at night. Saturday proved changeable with rain in the afternoon and evening. In Dublin the mean height of the barometer was 29·892 inches, pressure ranging between 29·620 inches at 9 a.m. of Sunday (wind, E.), and 30·167 inches on Monday afternoon (wind, calm). The corrected mean temperature was 46·4°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 45·7°. On Wednesday and again on Thursday the sheltered thermometers rose to 54·7°, having fallen to 37·9° on Sunday. The rainfall was 1·107 inches on six days, ·498 inch being measured on Sunday. South-westerly winds prevailed.

The weather remained very mild during the week ended Saturday, the 15th, the remarkable point being that both the barometer and the thermometer ranged high. Also it is unusual for fine weather and high temperatures to go hand and hand in winter. The period was rainless at many stations in Great Britain and in the East of Ireland. On Sunday morning cyclonic systems of no great depth were found off the North of Scotland and the North of Spain, while anticyclonic systems existed to the westward of Ireland and over the Baltic and Germany. Fine, quiet weather prevailed. Throughout the remainder of the week a large anticyclone stretched east and west across Central Europe, while depressions passed north-eastwards or eastwards across the extreme North of Europe. At first the British Islands lay well to the north of the centre of highest pressure, and so fresh S.W. to W. winds blew generally. On Friday the home countries came more under the influence of the anticyclonic calm area, so that the weather improved, becoming cooler and finer. Saturday was a pleasant, sunny day. In Dublin the mean height of the barometer was 30·356 inches, pressure ranging from 29·980 inches at 9 a.m. of Sunday (wind, W.S.W.) to 30·554 inches at 9 p.m. of Saturday (wind, S.S.W.). The corrected mean temperature was 46·0°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 45·6°. On Wednesday the screened thermometers rose to 53·6°, on Monday they fell to 36·9°. A very perfect lunar halo appeared on Sunday evening. The prevalent wind was again S.W. There was no rainfall in or near Dublin.

The open weather so characteristic of the present winter held throughout the week ended Saturday, the 22nd. Fine at the beginning and close, it was rainy and stormy during the middle of the period; but temperature was persistently above average, sometimes remarkably so. All through the week an anticyclone, in which the barometer stood as high as 30.60 inches, lay over Central Europe, where calm, foggy, and very cold weather prevailed. Thus at Munich the 8 a.m. thermometer readings were 23°, 18°, 18°, 15°, 16°, 18°, and 33° respectively. Meanwhile the barometer was low over the Norwegian Sea and Lapland—in the latter country it fell below 28.80 inches on Wednesday (to 28.76 inches at 8 a.m. at Haparanda). Strong S.W. to W. winds or gales swept over the British Isles and Scandinavia on this day, accompanied by only moderate rainfalls but by strangely high temperature. At Wick the thermometer rose to 60° in the shade, 3° above any maximal shade temperature recorded at that station in January since 1871, the previous highest reading being 57° in January, 1889. By 6 p.m. the thermometer had fallen 21° at Wick—namely to 39°. On Saturday morning a small depression passed eastward across Scotland and in its rear a brisk fall of temperature took place, extending to Ireland and England later in the day. In Dublin the mean height of the barometer was 30.265 inches, pressure falling from 30.475 inches at 9 a.m. of Sunday (wind S.E.), to 30.001 inches at 9 a.m. of Wednesday (wind, W.S.W.), and rising again to a maximum of 30.564 inches at 9 p.m. of Saturday (wind, N.E.). The corrected mean temperature was 50.6°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 50.1°. On Sunday the screened thermometers fell to 36.8°, on Wednesday they rose to 57.7°. The rainfall was .338 inch on four days, .180 inch being measured on Wednesday. The prevailing wind was S.W.

Another week—ended Saturday, the 29th—of singularly mild, fine weather has to be recorded. In Dublin the corrected mean temperatures of the past four weeks have been 46.4°, 46.0°, 50.6°, and 48.8°—all of which values are far above the average for January. As in previous weeks the distribution of atmospheric pressure has been anticyclonic (high and steady) over the southern half of the British Islands and Central Europe, cyclonic (low and unstable) in Northern Europe and to a less extent in the Mediterranean Basin also. Ireland lay constantly in the track of the S.W. winds of the N.W. quadrant of the anticyclone, and so the weather was throughout mild in this country. On Sunday morning, and to a less extent on Friday and Saturday, comparatively low temperatures occurred in England—in fact frost was registered on Sunday

morning, when the thermometer fell to 29° at York and Loughborough and to 30° at Cambridge. At this last station a minimum of 28° was recorded on Saturday. On Wednesday and Thursday a vast and deep depression passed eastwards across Lapland—at 8 a.m. of Thursday the barometer was down to 28.50 inches at Haparanda, on the Gulf of Bothnia, whereas it stood 2 inches higher (30.50 inches) at Lyons. At the time mentioned the thermometer read 31° at Haparanda but only -6° at Hermanstadt in Transylvania, 20 degrees of latitude further south. On Saturday a new depression in the far N.W. and N. caused the wind to freshen to a gale from S.W. in Ireland, with a moderate rainfall. In Dublin the mean height of the barometer was 30.419 inches, pressure varying from 30.589 inches at 9 a.m. of Sunday (wind, S.), to 30.239 inches at 9 p.m. of Saturday (wind, W.S.W.). The corrected mean temperature was 48.8° . The mean dry bulb reading at 9 a.m. and 9 p.m. was 48.3° . On Friday the screened thermometers fell to 40.8° , on Saturday they rose to 56.0° . Rain fell on Saturday to the amount of .034 inch only. S.W. winds again predominated.

The mild weather of the month culminated on Sunday, the 30th, the mean temperature of which was 56.9° , while the extremes were—highest, 60.8° ; lowest, 52.9° . The 31st was changeable—at first fair and colder, then milder, squally, and rainy.

In Dublin the rainfall up to January 31st, 1898, amounted to 1.786 inches on 14 days, compared with 2.694 inches on 17 days in 1897, only .720 inch on 14 days in 1896, and with a twenty-five years' average (1865–1889) of 2.200 inches on 17.3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 2.345 inches on 13 days, compared with 3.660 inches on 20 days in 1897, only .485 inch on 7 days in 1896, and 6.190 inches on 19 days in 1895. The heaviest falls in 24 hours were 1.030 inches on the 2nd, and .530 inch on the 1st.

At Cloneevin, Killiney, Co. Dublin, the rainfall was 1.580 inches on 13 days, .620 inch being measured on the 2nd. The average fall in January for the 12 years, 1885–1896, was 2.235 inches on 16.5 days. In 1894, the rainfall was 3.260 inches on 23 days, in 1895, 5.930 inches on 24 days, in 1896, .700 inch on 9 days, and in 1897, 3.080 inches on 20 days.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell on 9 days in January, the total measurement being 2.316 inches. On the 2nd 1.001 inches were registered; on the 1st, .486 inch, and on the 4th, .368 inch. At this climatological station the thermometer in the screen did not sink to 32° on any night. The highest temperature in the shade was 58.8° on the 30th; the lowest was 34.0° on the 10th.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1897.

| MONTH | Abs. Max. | Date | Abs. Min. | Date | Mean Daily Max. | Mean Daily Min. | Rainfall | Rainy Days | Mean Height of Barometer | Highest Pressure | Date | Lowest Pressure | Date | Prevailing Winds |
|-----------------------------|-----------|----------|-----------|-----------|-----------------|-----------------|----------|------------|--------------------------|------------------|-----------|-----------------|---------|------------------|
| January | 51.3 | 3rd | 25.0 | 17th | 42.2 | 34.0 | 2.694 | 17 | 29.918 | 30.434 | 1st | 29.284 | 30th | W.N.W., E.S.E. |
| February | 59.7 | 19th | 35.0 | 1st | 50.3 | 41.6 | 1.395 | 16 | 30.001 | 30.569 | 22nd | 29.209 | 1st | W., S.W., S.E. |
| March | 61.6 | 21st | 29.0 | 30th | 50.7 | 39.8 | 2.980 | 24 | 29.543 | 30.081 | 7th | 28.771 | 2nd | S.S.W., S.W., W. |
| April | 59.7 | 28th | 29.9 | 2nd | 51.5 | 40.3 | 2.485 | 22 | 29.818 | 30.289 | 10th | 29.281 | 1st | E., W.S.W. |
| May | 63.6 | 16th | 36.2 | 6th | 57.7 | 44.1 | 1.139 | 14 | 29.976 | 30.456 | 16th | 29.217 | 28th | N.W., N.E. |
| June | 73.7 | 22nd | 43.0 | 19th | 64.8 | 52.5 | 3.257 | 20 | 29.999 | 30.223 | 3rd | 29.348 | 18th | E., N.W. |
| July | 75.1 | 23rd | 46.1 | 11th | 67.5 | 54.6 | 1.650 | 12 | 30.003 | 30.361 | 11th | 29.601 | 20th | W., E., N.W. |
| August | 76.8 | 4th | 49.2 | 19th | 66.8 | 54.7 | 3.788 | 24 | 29.709 | 30.205 | 2nd | 29.246 | 21st | S., S.W., W. |
| September | 67.7 | 23rd | 40.9 | 18th | 60.5 | 48.4 | 2.583 | 16 | 29.990 | 30.578 | 13th | 29.177 | 1st | N.W., W., S.W. |
| October | 62.9 | 17th | 36.1 | 12th | 57.5 | 47.1 | 2.110 | 14 | 30.096 | 30.561 | 21st | 29.074 | 16th | E., S.E., W. |
| November | 60.9 | 12th | 34.0 | 15th | 53.1 | 44.0 | 3.422 | 14 | 30.127 | 30.654 | 20th | 29.311 | 28th | W.S.W., S.E. |
| December | 57.8 | 27th | 32.9 | 3rd | 49.8 | 40.0 | 1.841 | 18 | 29.751 | 30.555 | 21st | 28.740 | 29th | S.W., S., W. |
| Extremes, Totals, and Means | 76.8 | Aug. 4th | 25.0 | Jan. 17th | 56.0 | 45.1 | 29.344 | Days 211 | 29.911 | 30.654 | Nov. 20th | 28.740 | Dec. 29 | W., N.W., S.W. |

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dubl.; F.R.C.P.I.;

F. R. Met. Soc.

January 1, 1898.

PERISCOPE.

"MEIOTICS OR MYOTICS?"

UNDER this heading we find the following very interesting paragraph in the *New York Medical Journal*, for February 5, 1898:—

"In the January number of the *Dublin Journal of Medical Science*, in a review of an American book on therapeutics, the writer asks for the authority for the spelling 'meiotics' in lieu of the ordinary form, 'myotics.' 'Is not myotic,' he asks, 'the adjectival form of myosis, and is not this derived from *μύω*, to shut the eyes (*μύωψ*, short-sighted), rather than from *μείων*, less?' We think not. Liddell and Scott give *μείωσις*, (from *μείω*) as meaning diminution, the opposite of *αύξησις*, and cite Hippocrates among other authorities. They give also the adjective *μειωτικός* as meaning lowering, diminishing. They do not give *μύωσις* or *μυωτικός* at all, but they do give *μυωπός* as the equivalent of *μύωψ*, short-sighted. Now, we take it that meiotics have nothing to do with short-sightedness or with closing the lids (which latter is the primary meaning of *μύωψ*); their action is to cause *diminution* (*μείωσις*) of the size of the pupil."

There is no doubt that our American critics are etymologically correct. A competent classical authority informs us that the verbal substantive from *μύω* would be *μύσις*, and the corresponding verbal adjective *μυτικός*. Not only are such forms as *μύωσις* and *μυωτικός* not given by Liddell and Scott, but they could not exist. From this point of view *myotic* and *myosis* rest on a false analogy; *mytic* and *mysis* would be the only possible English formations from *μύω*. Classically, therefore, we must admit that we are beaten. Custom, however, will make it difficult to substitute "meiosis" (or "miosis") and "meiotics" (or "miotics") for the more familiar "myosis" and "myotics."

English and French authorities, both in dictionaries and in works, are all in favour of "myosis" and "myotics" from *μύω*. For example, in Quain's Dictionary of Medicine, in the article on "Disorders of the Pupil" we read, "Myosis (*μύω*, I close)—Synon.: Called by some, but not very appropriately, *Miosis*, from *μείωσις*, which signifies diminution in *bulk*, and is already

employed as a technical term in rhetoric. Myosis is an unnatural smallness of the pupil, and may be mechanical, toxic, or neuropathic." Dr. Theodore Maxwell, in his *Terminologia medica polyglotta* (London: J. & A. Churchill, 1890), has the French term "Myose," which is defined "resserrement permanent de la pupille." In the New Sydenham Society's *Lexicon* "Myosis" is defined as permanent contraction of the pupil, while "Meiosis" is the status decrementi of a disease, or the period during which the symptoms abate. "Myotics," according to the same authority, are agents which cause contraction of the pupil.

ARMY MEDICAL SCHOOL, NETLEY.

ARMY MEDICAL STAFF.—The following is the official list of Surgeons on probation of the Medical Staff of the British Army who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—

| January 31st, 1898. | | | |
|-------------------------------------|-------------------|--------------------|-------------------|
| | Combined Marks | | Combined Marks |
| ^a Browne-Mason, H. O. B. | 5,322 | Young, A. H. O. | 3,996 |
| ^b Penny, F. S. | 5,099 | Bourke, E. A. | 3,866 |
| Watts, B. | 4,756 | Lowsley, M. M. | 3,597 |
| Martin, H. G. | 4,519 | Lupton, A. C. | 3,520 |
| Berne, J. G. | 4,241 | Carter, G. B. | 3,497 |
| Carroll, F. F. | 4,123 | Ross, N. H. | 3,493 |
| Macpherson, J. D. G. | 4,069 | Collingwood, P. H. | 3,120 |
| Gwynn, W. P. | 4,055 | O'Gorman, C. J. | 3,795 |
| O'Grady, S. de C. | 4,020 | | |

INDIAN MEDICAL SERVICE.—The following is the official list of Surgeons on probation of the Indian Medical Service who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—

* Gained the Pathology and Parkes Memorial Bronze Medal.

° Gained the Maclean Prize for Clinical and Ward Work.

January 31st, 1898.

| Combined Marks | | Combined Marks | |
|-----------------------------|-------|-------------------|-------|
| ^a Delany, T. H. | 5,754 | Hunt, S. | 4,844 |
| ^b Rait, J. W. F. | 5,619 | Sargent, A. G. | 4,784 |
| Douglas, S. R. | 5,466 | Cox, W. H. | 4,779 |
| ^c O'Meara, E. J. | 5,392 | Condon, de V. | 4,740 |
| ^d Tate, G. | 5,072 | Gidney, H. A. J. | 4,641 |
| Baird, R. F. | 5,050 | Kirkpatrick, H. | 4,619 |
| Gage, A. T. | 4,892 | Fayrer, F. D. S. | 4,432 |
| Laing, G. C. | 4,857 | Chitale, P. H. | 4,421 |
| MacPherson, G. | 4,851 | Lethbridge, W. | 4,115 |

The Prizes were presented by General Sir Henry W. Norman, G.C.B., G.C.M.G., C.I.E.

INDIAN MEDICAL SERVICE.

THE India Office, Whitehall, S.W., has furnished the following official list of candidates who have been successful at the Examination held in London in February, 1898:—

| | | | |
|------------------|-------|-----------------------|-------|
| 1 Hunter, T. | 3,470 | 9 George, G. F. S. | 2,904 |
| 2 Battye, W. R. | 3,345 | 10 Tucker, E. F. G. | 2,886 |
| 3 Meakin, H. B. | 3,215 | 11 Liston, W. G. | 2,876 |
| 4 Hutcheson, G. | 3,157 | 12 Thompson, F. S. C. | 2,805 |
| 5 Anthony, R. W. | 3,066 | 13 Twigg, H. J. R. | 2,770 |
| 6 Stewart, G. E. | 3,046 | 14 Orpen, C. W. M'G. | 2,745 |
| 7 Boulton, H. | 2,994 | 15 Novis, T. S. | 2,721 |
| 8 Watson, J. W. | 2,962 | | |

EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY AND INDIAN MEDICAL SERVICES.

THE following are the papers which were set at the Examination held in February, 1898:—

Chemistry and Materia Medica.—Dr. Norman Moore. Friday, 4th February, 1898, from 10 a.m. to 1 p.m. N.B.—The replies to be written with the ink provided, and not with a pencil or pale ink. 1. Describe an experiment demonstrating the chemical composition of water. 2. What are the properties of phosphorus? Describe its modifications and mention (with their formulæ) the acids into the composition of which it enters. 3. What are the preparations (in the Pharmacopœia) of each of the following metals: mercury, bismuth, iron? 4. Mention the chief expectorants of the Pharmacopœia. State the dose of each (a)

^a Gained the Pathology Prize and Herbert Prize.

^b Gained the Montefiore Medal and Prize of 20 guineas, and the de Chaumont Prize in Hygiene.

^c Gained the 2nd Montefiore Prize in Surgery.

^d Gained the Martin Memorial Gold Medal.

for an adult, (b) for a child of five years of age. 5. Name the chief drugs used to procure sleep and the dose of each. What precautions ought to be observed in their administration?

Surgery.—Sir William MacCormac, Bart. Friday, 4th February, 1898, from 2 p.m. to 5 p.m. All four questions to be answered. 1. Enumerate the complications which may occur in a case of otitis media. Give the symptoms and treatment of abscess of the temporo-sphenoidal lobe dependent upon this cause. 2. Write an account of the course of a case of typical syphilis. Give the treatment you would adopt, and mention any matters of importance in arriving at a prognosis. 3. Mention two causes which produce ulceration of the cornea? Give a brief account of the treatment you would adopt in each case, the possible complications which may result, and the manner of dealing with them. 4. Give a description, pathological as well as clinical, of a case of carcinoma of the breast. Describe the varieties of the disease met with, and in the event of an operation being performed, mention any operative details you consider important.

Medicine and Pathology.—Professor McCall Anderson. Saturday, 5th February, 1898, from 10 a.m. to 1 p.m. 1. What is your opinion with regard to the following case: give the grounds for your diagnosis; say what treatment you would recommend; and, in the event of a fatal issue, what would you find *post mortem*:—A soldier, aged 32, was admitted into hospital on 4th December, 1897. He stated that he had always enjoyed fair health, but admitted that he had led a very irregular life. He complained of debility, some loss of flesh, excessive urination, and, above all, of a right internal squint of some weeks' duration; indeed, it was this which induced him to seek advice. On examination he was found to be pallid, rather weakly, and slightly emaciated, but there was no fever. The internal squint was pronounced, and he was quite unable to turn the eye outwards. There were no head symptoms, and the heart and lungs were healthy, while the digestion was fair. But the liver was greatly and uniformly enlarged; it felt very firm, and was not the seat of either pain or tenderness. The urine was very pale, 120 ounces per day, specific gravity, 1.013; it contained a small quantity of albumen, and an occasional granular or hyaline tube cast was discovered in the scanty deposit. Finally, on one shoulder there was a patch of eruption, about the size of the hand, which had appeared about 8 months before admission. It was composed of tubercles of a dusky red tint, with here and there an admixture of violet. Some of these had ulcerated and were capped with greenish crusts. The edge of the patch was rounded, abrupt, and elevated. 2. About what day of the fever does the eruption

make its appearance in the following diseases:—(a.) Rubella (German measles)? (b.) Morbilli (measles)? (c.) Scarlatina? (d.) Typhus? (e.) Enteric fever? (f.) Varicella? (g.) Variola? 3. How would you treat typical uncomplicated cases of—(a.) Lead colic? (b.) Ulcer of the stomach? (c.) Acute tubular nephritis? 4. Write down what you know with regard to beriberi.

Anatomy and Physiology.—Mr. Makins. Saturday, 5th February, 1898, from 2 p.m. to 5 p.m. 1. Describe the urinary bladder in the male, and give its relations to surrounding structures. 2. Give a short account of the anatomy and functions of the tympanum and its annexes. 3. Trace the course and distribution of the musculo-spiral nerve from its origin to a point on a level with the external condyle of the humerus. 4. Describe the sequence of changes which carbohydrates and fats undergo in their passage through the body.

Natural Sciences.—Dr. Norman Moore. Friday, 11th February, 1898, from 2 to 5 p.m. Candidates may answer not more than 6 questions, and they must confine themselves to 2 branches of science only. *Zoology and Comparative Anatomy*:—1. Describe the arrangement of the bones in the forelimb of a horse. Point out how the forelimb of a horse differs from and how it resembles the forelimb of a man. 2. Describe the heart and circulatory system of an osseous fish. 3. Give an account of the structure and life history of amoeba. *Botany*:—1. A tree weighing 12 pounds when planted in a pot of earth in 1894 is found in 1898 to have doubled in weight. The pot is unchanged in weight. The earth weighs 4 ounces less than in 1894. Explain in what way the tree has obtained its increased weight of 12 pounds. 2. Give the characteristics of the following natural orders: malvaceæ, rosaceæ, labiatae, scrophulariaceæ, solanaceæ. 3. Describe the method of fertilization in wheat, in the date palm, and in any species of orchis with which you may be acquainted. *Physics*:—1. What is meant by the specific gravity of a substance? How would you ascertain the specific gravity of a diamond? 2. Describe experiments illustrating conduction of heat and convection of heat. 3. Describe the structure and use of the gold-leaf electroscope. *Physical Geography and Geology*:—1. In what strata do the remains of the following animals occur, and in which they are most abundant: encrinites, ammonites, large saurians, marsupial mammals? 2. Describe the appearances which would indicate that a particular tract of land had once been occupied by a fresh water lake. 3. Define the following terms:—(1.) Fault. (2.) Isothermal lines. (3.) Metamorphic rocks. (4.) Granite.

In Memoriam.

RINGROSE ATKINS, M.A., M.D., M.CH., R.U.I.

A SORE loss has befallen this Journal in the almost sudden death, on Friday, February 4, 1898, of DR. RINGROSE ATKINS, Resident Medical Superintendent of the District Lunatic Asylum, Waterford, and for very many years the able Reporter on Nervous and Mental Diseases in successive volumes of *The Dublin Journal of Medical Science*. The immediate cause of Dr. Atkins' death was an attack of suppurative appendicitis, followed by rupture into the peritoneum, and collapse. He was but two days acutely ill, and he died at the comparatively early age of 47 years.

Educated in Queen's College, Cork, ATKINS graduated in Arts (1871) and Medicine (1878), in the Queen's University of Ireland, which was afterwards merged in the Royal University of Ireland. He was a Scholar, Prizeman, and Gold Medallist of the University. Soon after graduation he was appointed Assistant Resident Medical Officer to the District Lunatic Asylum, Cork. Five years later he was appointed, by the Lord Lieutenant, Resident Medical Superintendent of the District Asylum, Waterford—an appointment which he filled with conspicuous ability and success to the day of his death.

RINGROSE ATKINS was a model Superintendent. Highly educated, well-read, and conscientious, the well-being of his afflicted patients was the happiness of his life. It was no wonder then that he won the affection of his patients, and was marvellously successful in his practice. While still a young man he contributed to the *British Medical Journal* for 1878 his "Pathological Illustrations of Localisation of the Motor Functions of the Brain." Other communications of standard excellence came from his pen from time to time—as, for example his papers on "Arterio-Capillary Fibrosis," "Morbid Changes in Blood-vessels and the Nerve-elements of the Brain of the Insane," and the "Morbid Histology of the Spinal Cord in Insanity." We have already mentioned his classical Reports in this Journal.

ATKINS was an ardent lover of Nature and of Art alike, and this led him to travel, year after year, to quite distant parts of Europe, to North Africa, and North America. He was a skilful photographer, and on more than one occasion won the medal of the National Society for Photographic Art.

Of his private character it is impossible to speak in any but the highest terms. His was a finely-strung, sensitive, guileless nature. Truthful, considerate, and sympathetic, he lived and died loving and beloved.

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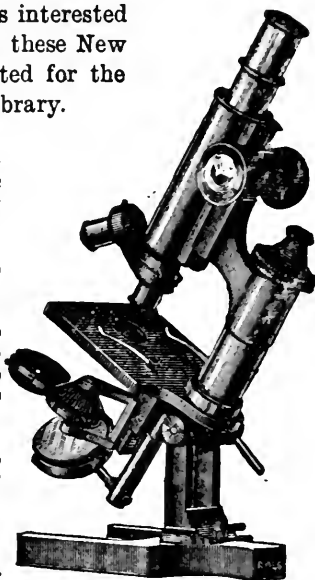
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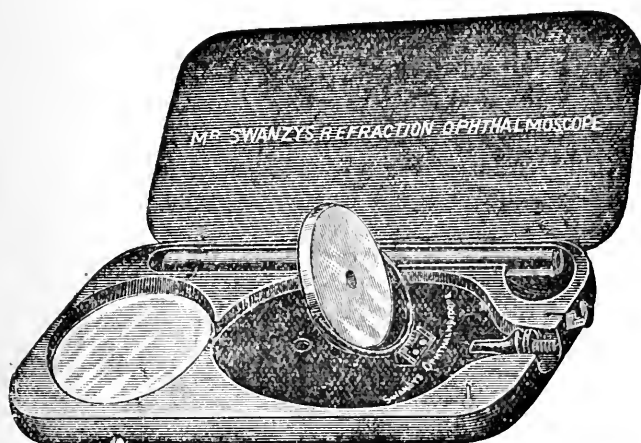
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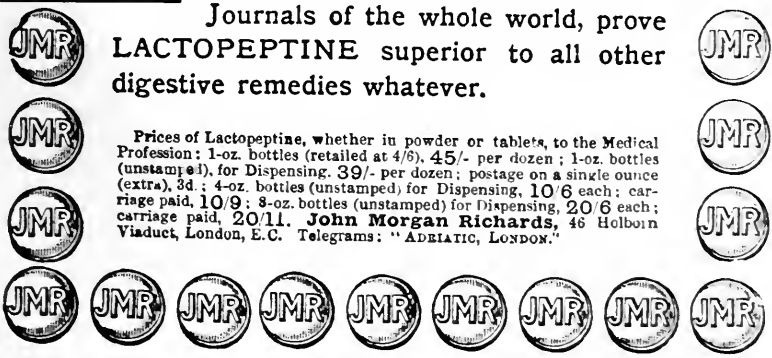
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